

[MS-ASEMAIL]: ActiveSync E-Mail Class Protocol Specification

Intellectual Property Rights Notice for Open Specifications Documentation

- **Technical Documentation.** Microsoft publishes Open Specifications documentation for protocols, file formats, languages, standards as well as overviews of the interaction among each of these technologies.
- **Copyrights.** This documentation is covered by Microsoft copyrights. Regardless of any other terms that are contained in the terms of use for the Microsoft website that hosts this documentation, you may make copies of it in order to develop implementations of the technologies described in the Open Specifications and may distribute portions of it in your implementations using these technologies or your documentation as necessary to properly document the implementation. You may also distribute in your implementation, with or without modification, any schema, IDL's, or code samples that are included in the documentation. This permission also applies to any documents that are referenced in the Open Specifications.
- **No Trade Secrets.** Microsoft does not claim any trade secret rights in this documentation.
- **Patents.** Microsoft has patents that may cover your implementations of the technologies described in the Open Specifications. Neither this notice nor Microsoft's delivery of the documentation grants any licenses under those or any other Microsoft patents. However, a given Open Specification may be covered by Microsoft's Open Specification Promise (available here: <http://www.microsoft.com/interop/osp>) or the Community Promise (available here: <http://www.microsoft.com/interop/cp/default.msp>). If you would prefer a written license, or if the technologies described in the Open Specifications are not covered by the Open Specifications Promise or Community Promise, as applicable, patent licenses are available by contacting iplq@microsoft.com.
- **Trademarks.** The names of companies and products contained in this documentation may be covered by trademarks or similar intellectual property rights. This notice does not grant any licenses under those rights.
- **Fictitious Names.** The example companies, organizations, products, domain names, e-mail addresses, logos, people, places, and events depicted in this documentation are fictitious. No association with any real company, organization, product, domain name, email address, logo, person, place, or event is intended or should be inferred.

Reservation of Rights. All other rights are reserved, and this notice does not grant any rights other than specifically described above, whether by implication, estoppel, or otherwise.

Tools. The Open Specifications do not require the use of Microsoft programming tools or programming environments in order for you to develop an implementation. If you have access to Microsoft programming tools and environments you are free to take advantage of them. Certain Open Specifications are intended for use in conjunction with publicly available standard specifications and network programming art, and assumes that the reader either is familiar with the aforementioned material or has immediate access to it.

Revision Summary

Date	Revision History	Revision Class	Comments
12/03/2008	1.0.0	Major	Initial Release.
02/04/2009	1.0.1	Editorial	Revised and edited technical content.
03/04/2009	1.0.2	Editorial	Revised and edited technical content.
04/10/2009	2.0.0	Major	Updated technical content and applicable product releases.
07/15/2009	3.0.0	Major	Revised and edited for technical content.
11/04/2009	4.0.0	Major	Updated and revised the technical content.
02/10/2010	5.0.0	Major	Updated and revised the technical content.
05/05/2010	6.0.0	Major	Updated and revised the technical content.
08/04/2010	6.0.0	No change	No changes to the meaning, language, or formatting of the technical content.
11/03/2010	6.1	Minor	Clarified the meaning of the technical content.

Contents

1	Introduction	7
1.1	Glossary	7
1.2	References.....	8
1.2.1	Normative References.....	8
1.2.2	Informative References	9
1.3	Overview	9
1.4	Relationship to Other Protocols.....	9
1.5	Prerequisites/Preconditions	9
1.6	Applicability Statement.....	9
1.7	Versioning and Localization	9
1.8	Vendor-Extensible Fields.....	10
1.9	Standards Assignments	10
2	Messages.....	11
2.1	Transport.....	11
2.2	Message Syntax	11
2.2.1	Namespaces	15
2.2.2	Elements.....	15
2.2.2.1	To.....	18
2.2.2.2	Cc.....	19
2.2.2.3	From.....	19
2.2.2.4	Subject	19
2.2.2.5	ReplyTo.....	19
2.2.2.6	DateReceived.....	19
2.2.2.7	DisplayTo	19
2.2.2.8	ThreadTopic.....	19
2.2.2.9	Importance	19
2.2.2.10	Read	20
2.2.2.11	airsyncbase:Attachments	20
2.2.2.11.1	airsyncbase:Attachment.....	20
2.2.2.11.1.1	DisplayName.....	20
2.2.2.11.1.2	email2:UmAttOrder.....	20
2.2.2.11.1.3	email2:UmAttDuration.....	21
2.2.2.12	airsyncbase:Body.....	21
2.2.2.13	MessageClass	21
2.2.2.14	MeetingRequest.....	23
2.2.2.14.1	AllDayEvent.....	24
2.2.2.14.2	StartTime.....	24
2.2.2.14.3	DtStamp	24
2.2.2.14.4	EndTime.....	24
2.2.2.14.5	InstanceType	24
2.2.2.14.6	Location	25
2.2.2.14.7	Organizer	25
2.2.2.14.8	RecurrenceId	25
2.2.2.14.9	Recurrences.....	25
2.2.2.14.9.1	Recurrence	25
2.2.2.14.9.1.1	Type.....	26
2.2.2.14.9.1.2	Interval.....	26
2.2.2.14.9.1.3	Until	26
2.2.2.14.9.1.4	Occurrences	27

2.2.2.14.9.1.5	WeekOfMonth	27
2.2.2.14.9.1.6	DayOfMonth	27
2.2.2.14.9.1.7	DayOfWeek	27
2.2.2.14.9.1.8	MonthOfYear.....	28
2.2.2.14.9.1.9	email2:CalendarType	28
2.2.2.14.9.1.10	email2:IsLeapMonth	29
2.2.2.14.9.1.11	email2:FirstDayOfWeek	29
2.2.2.14.10	Reminder.....	29
2.2.2.14.11	ResponseRequested	30
2.2.2.14.12	Sensitivity	30
2.2.2.14.13	BusyStatus	30
2.2.2.14.14	TimeZone	30
2.2.2.14.15	GlobalObjId	31
2.2.2.14.16	DisallowNewTimeProposal.....	32
2.2.2.14.17	email2:MeetingMessageType.....	32
2.2.2.15	InternetCPID	33
2.2.2.16	Flag	33
2.2.2.16.1	tasks:Subject.....	34
2.2.2.16.2	Status.....	34
2.2.2.16.3	FlagType	34
2.2.2.16.4	tasks:DateCompleted.....	34
2.2.2.16.5	CompleteTime.....	35
2.2.2.16.6	tasks:StartDate.....	35
2.2.2.16.7	tasks:DueDate	35
2.2.2.16.8	tasks:UtcStartDate	36
2.2.2.16.9	tasks:UtcDueDate	36
2.2.2.16.10	tasks:ReminderSet	36
2.2.2.16.11	tasks:ReminderTime	36
2.2.2.16.12	tasks:OrdinalDate.....	37
2.2.2.16.13	tasks:SubOrdinalDate	37
2.2.2.17	ContentClass	37
2.2.2.18	airsynbase:NativeBodyType	37
2.2.2.19	email2:UmCallerID.....	37
2.2.2.20	email2:UmUserNotes.....	38
2.2.2.21	email2:ConversationId	38
2.2.2.22	email2:ConversationIndex	39
2.2.2.23	email2:LastVerbExecuted.....	39
2.2.2.24	email2:LastVerbExecutionTime	39
2.2.2.25	email2:ReceivedAsBcc	39
2.2.2.26	email2:Sender.....	40
2.2.2.27	Categories	40
2.2.2.27.1	Category	40
2.2.2.28	airsynbase:BodyPart	40
2.2.2.29	email2:AccountId.....	41
2.2.2.30	rm:RightsManagementLicense	41

3	Protocol Details.....	42
3.1	Client Details.....	42
3.1.1	Abstract Data Model	42
3.1.2	Timers	42
3.1.3	Initialization	42
3.1.4	Higher-Layer Triggered Events.....	42
3.1.4.1	Synchronize E-mail Between Client and Server.....	42

3.1.4.2	Send E-mail	42
3.1.4.3	Search E-mail	42
3.1.4.4	Retrieve Individual E-mail	42
3.1.4.5	Send and Receive Meeting Requests	43
3.1.4.6	Send Flag Updates to the Server	43
3.1.5	Message Processing Events and Sequencing Rules	44
3.1.5.1	ItemOperations Command Request	44
3.1.5.2	Search Command Request	47
3.1.5.3	Sync Command Request	47
3.1.6	Timer Events	56
3.1.7	Other Local Events	56
3.2	Server Details	56
3.2.1	Abstract Data Model	56
3.2.2	Timers	56
3.2.3	Initialization	56
3.2.4	Higher-Layer Triggered Events	57
3.2.4.1	Synchronize E-mail Between Client and Server	57
3.2.4.2	Search E-mail	57
3.2.4.3	Retrieve Individual E-mail	57
3.2.4.4	Change Tracking Semantics for Flagging Properties	57
3.2.4.5	Send Changes to the Client	57
3.2.5	Message Processing Events and Sequencing Rules	58
3.2.5.1	ItemOperations Command Response	58
3.2.5.2	Search Command Response	60
3.2.5.3	Sync Command Response	62
3.2.6	Timer Events	67
3.2.7	Other Local Events	67
4	Protocol Examples	68
4.1	Synchronizing E-Mail	68
4.1.1	Example Sync Request for Inbox with Metadata	68
4.1.2	Example Sync Response for Inbox with Metadata	68
4.1.3	Example Sync Request for Inbox with Body Preferences	69
4.1.4	Example Sync Response Adding One HTML Message	70
4.1.5	Example Sync Response Adding an Electronic Voice Mail Attachment	71
4.1.6	Example Sync Response Adding a Text Attachment	72
4.1.7	Example Sync Request Deleting One E-mail	73
4.1.8	Example Success Sync Response	73
4.1.9	Example Sync Response Adding a Meeting Request	73
4.1.10	Example Sync Response Adding a Meeting Request with a Recurrence	75
4.1.11	Example ItemOperations Request	76
4.1.12	Example ItemOperations Response With Fetched Content	76
4.2	Setting MeetingRequest Recurrence Intervals	77
4.3	Setting Flags on the Client and Server	78
4.3.1	Example Sync Request Setting a Flag on the Client	78
4.3.2	Example Sync Request Setting a Flag on the Server	79
4.3.3	Example Sync Request Setting the Complete Flag	79
4.3.4	Example Sync Request Clearing a Flag on the Client	80
5	Security	82
5.1	Security Considerations for Implementers	82
5.2	Index of Security Parameters	82

6	Appendix A: Product Behavior	83
7	Change Tracking.....	85
8	Index	87

1 Introduction

This document specifies the **XML** representation of e-mail data sent or received on mobile devices that communicate by using the ActiveSync protocols.

1.1 Glossary

The following terms are defined in [\[MS-OXGLOS\]](#):

attachment
attendee
base64 encoding
binary large object (BLOB)
busy
calendar
Calendar folder
Calendar object
class
code page (2)
collection
conversation
Coordinated Universal Time (UTC)
delegate
delivery receipt
free
Hypertext Markup Language (HTML)
mailbox
meeting
meeting request
message
message database (MDB)
message part
non-delivery report (NDR)
non-read receipt
Out of Office (OOF)
property (1)
read receipt
recipient (2)
recurrence pattern
synchronization
tentative
Uniform Resource Identifier (URI)
Wireless Application Protocol (WAP) Binary XML (WBXML)
XML
XML namespace

The following terms are specific to this document:

Voice over Internet Protocol (VoIP): The transmission of voice capabilities over the Internet.

MAY, SHOULD, MUST, SHOULD NOT, MUST NOT: These terms (in all caps) are used as described in [\[RFC2119\]](#). All statements of optional behavior use either MAY, SHOULD, or SHOULD NOT.

1.2 References

1.2.1 Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact dochelp@microsoft.com. We will assist you in finding the relevant information. Please check the archive site, <http://msdn2.microsoft.com/en-us/library/E4BD6494-06AD-4aed-9823-445E921C9624>, as an additional source.

[E164] International Telecommunication Union, "The international public telecommunication numbering plan", February 2005, <http://www.itu.int/rec/T-REC-E.164/e>

[MS-ASAIRS] Microsoft Corporation, "[ActiveSync AirSyncBase Namespace Protocol Specification](#)", December 2008.

[MS-ASCAL] Microsoft Corporation, "[ActiveSync Calendar Class Protocol Specification](#)", December 2008.

[MS-ASCMD] Microsoft Corporation, "[ActiveSync Command Reference Protocol Specification](#)", December 2008.

[MS-ASCNTC] Microsoft Corporation, "[ActiveSync Contact Class Protocol Specification](#)", December 2008.

[MS-ASCON] Microsoft Corporation, "[ActiveSync Conversations Protocol Specification](#)", April 2009.

[MS-ASDOC] Microsoft Corporation, "[ActiveSync Document Class Protocol Specification](#)", December 2008.

[MS-ASDTYPE] Microsoft Corporation, "[ActiveSync Data Types](#)", December 2008.

[MS-ASHTTP] Microsoft Corporation, "[ActiveSync HTTP Protocol Specification](#)", December 2008.

[MS-ASNOTE] Microsoft Corporation, "[ActiveSync Notes Class Protocol Specification](#)", April 2009.

[MS-ASRM] Microsoft Corporation, "[ActiveSync Rights Management Protocol Specification](#)", August 2010.

[MS-ASMS] Microsoft Corporation, "[ActiveSync Short Message Service Protocol Specification](#)", April 2009.

[MS-ASTASK] Microsoft Corporation, "[ActiveSync Tasks Class Protocol Specification](#)", December 2008.

[MS-ASWBXML] Microsoft Corporation, "[ActiveSync WAP Binary XML \(WBXML\) Protocol Specification](#)", December 2008.

[MS-IPFFX] Microsoft Corporation, "InfoPath Form File Format Specification", June 2008, <http://msdn.microsoft.com/en-us/library/cc313058.aspx>

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997, <http://www.ietf.org/rfc/rfc2119.txt>

[RFC3261] Rosenberg, J., Schulzrinne, H., Camarillo, G., et al., "SIP: Session Initiation Protocol", RFC 3261, June 2002, <http://www.ietf.org/rfc/rfc3261.txt>

[XML] World Wide Web Consortium, "Extensible Markup Language (XML) 1.0 (Fourth Edition)", W3C Recommendation, 16 August 2006, edited in place 29 September 2006, <http://www.w3.org/TR/2006/REC-xml-20060816/>

[XMLNS] Bray, T., Hollander, D., Layman, A., Eds., et al., "Namespaces in XML 1.0 (Third Edition)", December 2009, <http://www.w3.org/TR/REC-xml-names/>

[XMLSCHEMA1] Thompson, H., Beech, D., Maloney, M., and Mendelsohn, N., Eds., "XML Schema Part 1: Structures", W3C Recommendation, May 2001, <http://www.w3.org/TR/2001/REC-xmlschema-1-20010502/>

1.2.2 Informative References

[MS-OXGLOS] Microsoft Corporation, "[Exchange Server Protocols Master Glossary](#)", April 2008.

1.3 Overview

This document specifies the XML representation of e-mail data sent or received on mobile devices that communicate by using the ActiveSync protocols. E-mail data is included in protocol command requests when e-mail data is being sent from the client to the server. E-mail data is also included in protocol command responses when e-mail data is retrieved from the server. E-mail data includes header information such as to, from, and subject, as well as body, **attachment**, flag, and **meeting request** information.

1.4 Relationship to Other Protocols

This document specifies the XML representation of e-mail **message** data that is sent and received by the protocol commands, as specified in [\[MS-ASCMD\]](#).

All data types in this document conform to the data type definitions specified in [\[MS-ASDTYPE\]](#).

Estimated data size, body content, and data truncation information about e-mail messages are not part of the E-mail **class** data. Instead, that data is contained in the AirSyncBase namespace, as specified in [\[MS-ASAIRS\]](#).

The **code page** used to encode E-mail class data is specified in [\[MS-ASWBXML\]](#).

1.5 Prerequisites/Preconditions

None.

1.6 Applicability Statement

This protocol specifies a set of elements for use in communicating e-mail data using the commands specified in [\[MS-ASCMD\]](#). This set of elements is applicable when communicating e-mail data such as to, from, and subject, as well as body, attachment, flag, and meeting request information between a mobile device and a server. These elements are not applicable when sending **calendar**, task, note, or contact data between a mobile device and a server.

1.7 Versioning and Localization

None.

1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

None.

2 Messages

2.1 Transport

The E-mail class consists of a series of XML elements that are embedded inside of a command request or response. The elements of the E-mail class are defined in five namespaces: Email, Email2, [AirSyncBase](#), Tasks, and RightsManagement. [All of the elements in the Email and Email2 namespaces, as well as the top level elements imported from the AirSyncBase, Tasks, and RightsManagement namespaces are specified in this document. However, elements defined in the AirSyncBase namespace are further specified in \[\\[MS-ASAIRS\\]\]\(#\).](#)

2.2 Message Syntax

The markup MUST be well-formed XML, as specified in [\[XML\]](#) section 2.1, using the commands specified in [\[MS-ASCMD\]](#).

The XML markup that constitutes the request body or the response body is transmitted between the client and server using **Wireless Application Protocol (WAP) Binary XML (WBXML)** [\[MS-ASWBXML\]](#).

The Email class is constituted by elements from the following namespaces: Email, Email2, Tasks, AirSyncBase, and RightsManagement. All elements from the Email and Email2 namespaces are specified in this document, as are top level elements imported from the Tasks, AirSyncBase, and RightsManagement namespaces. This section provides full or partial XSDs [\[XMLSCHEMA1\]](#) for these namespaces, as applicable.

The Email namespace is defined as follows.

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:tns="Email:" xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns:airsyncbase="AirSyncBase:" xmlns:email2="Email2:" xmlns:tasks="Tasks:"
  xmlns:rightsmanagement="RightsManagement" targetNamespace="Email:"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:import namespace="AirSyncBase:" schemaLocation="AirSyncBase.xsd"/>
  <xs:import namespace="Tasks:" schemaLocation="Tasks.xsd"/>
  <xs:import namespace="Email2:" schemaLocation="Email2.xsd"/>
  <xs:element name="To">
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:maxLength value="32768"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:element>
  <xs:element name="Cc" type="xs:string"/>
  <xs:element name="From">
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:maxLength value="32768"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:element>
  <xs:element name="Subject" type="xs:string"/>
  <xs:element name="ReplyTo" type="xs:string"/>
  <xs:element name="DateReceived" type="xs:dateTime"/>
  <xs:element name="DisplayTo" type="xs:string"/>
  <xs:element name="ThreadTopic" type="xs:string"/>
  <xs:element name="Importance" type="xs:unsignedByte"/>
</xs:schema>
```

```

<xs:element name="Read" type="xs:boolean"/>
<xs:element name="MessageClass" type="xs:string"/>
<xs:element name="MeetingRequest">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="AllDayEvent" type="xs:unsignedByte" minOccurs="0"/>
      <xs:element name="StartTime" type="xs:dateTime" minOccurs="1"/>
      <xs:element name="DtStamp" type="xs:dateTime" />
      <xs:element name="EndTime" type="xs:dateTime" />
      <xs:element name="InstanceType" type="xs:unsignedByte" />
      <xs:element name="Location" minOccurs="0">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:maxLength value="32768"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element name="Organizer" type="xs:string" minOccurs="0"/>
      <xs:element name="RecurrenceId" type="xs:dateTime" minOccurs="0"/>
      <xs:element name="Reminder" type="xs:unsignedShort" minOccurs="0"/>
      <xs:element name="ResponseRequested" type="xs:unsignedByte" minOccurs="0"/>
      <xs:element name="Recurrences" minOccurs="0">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="Recurrence" >
              <xs:complexType>
                <xs:sequence>
                  <xs:element name="Type" type="xs:unsignedByte" />
                  <xs:element name="Interval" type="xs:integer" />
                  <xs:element name="Until" type="xs:dateTime" />
                  <xs:element name="Occurrences" type="xs:integer" minOccurs="0"/>
                  <xs:element name="WeekOfMonth" type="xs:integer" minOccurs="0"/>
                  <xs:element name="DayOfMonth" type="xs:integer" minOccurs="0"/>
                  <xs:element name="DayOfWeek" type="xs:integer" minOccurs="0"/>
                  <xs:element name="MonthOfYear" type="xs:integer" minOccurs="0"/>
                  <xs:element ref="email2:CalendarType" minOccurs="0"/>
                  <xs:element ref="email2:IsLeapMonth" minOccurs="0"/>
                  <xs:element ref="email2:FirstDayOfWeek" minOccurs="0"/>
                </xs:sequence>
              </xs:complexType>
            </xs:element>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="Sensitivity" type="xs:integer" minOccurs="0"/>
      <xs:element name="BusyStatus" type="xs:integer" minOccurs="0"/>
      <xs:element name="TimeZone" type="xs:string" />
      <xs:element name="GlobalObjId" type="xs:string" />
      <xs:element name="DisallowNewTimeProposal" type="xs:unsignedByte" minOccurs="0"/>
      <xs:element ref="email2:MeetingMessageType" />
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="InternetCPID" type="xs:string"/>
<xs:element name="Flag">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="tasks:Subject" minOccurs="0"/>
      <xs:element name="Status" type="xs:integer" minOccurs="0"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

```

        <xs:element name="FlagType" type="xs:string" minOccurs="0"/>
        <xs:element ref="tasks:DateCompleted" minOccurs="0"/>
        <xs:element name="CompleteTime" type="xs:dateTime" minOccurs="0"/>
        <xs:element ref="tasks:StartDate" minOccurs="0"/>
        <xs:element ref="tasks:DueDate" minOccurs="0"/>
        <xs:element ref="tasks:UtcStartDate" minOccurs="0"/>
        <xs:element ref="tasks:UtcDueDate" minOccurs="0"/>
        <xs:element ref="tasks:ReminderSet" minOccurs="0"/>
        <xs:element ref="tasks:ReminderTime" minOccurs="0"/>
        <xs:element ref="tasks:OrdinalDate" minOccurs="0"/>
        <xs:element ref="tasks:SubOrdinalDate" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="ContentClass" type="xs:string"/>
<xs:element name="Categories">
    <xs:complexType>
        <xs:sequence>
            <xs:element name="Category" minOccurs="0" maxOccurs="300"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:group name="TopLevelSchemaProps">
    <xs:sequence>
        <xs:element name="To"/>
        <xs:element name="Cc"/>
        <xs:element name="From"/>
        <xs:element name="ReplyTo"/>
        <xs:element name="DateReceived"/>
        <xs:element name="Subject"/>
        <xs:element name="DisplayTo"/>
        <xs:element name="Importance"/>
        <xs:element name="Read"/>
        <xs:element name="MessageClass"/>
        <xs:element name="MeetingRequest"/>
        <xs:element name="ThreadTopic"/>
        <xs:element name="InternetCPID"/>
    </xs:sequence>
</xs:group>
</xs:schema>

```

The Email2 namespace is defined as follows.

```

<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:tns="Email2:" xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns:email2="Email2" targetNamespace="Email2:" elementFormDefault="qualified"
  attributeFormDefault="unqualified">
    <xs:element name="UmCallerID" type="xs:string"/>
    <xs:element name="UmUserNotes" type="xs:string"/>
    <xs:element name="UmAttDuration" type="xs:integer"/>
    <xs:element name="UmAttOrder" type="xs:integer"/>
    <xs:element name="ConversationId" type="xs:string"/>
    <xs:element name="ConversationIndex" type="xs:string"/>
    <xs:element name="LastVerbExecuted" type="xs:integer"/>
    <xs:element name="LastVerbExecutionTime" type="xs:dateTime"/>
    <xs:element name="ReceivedAsBcc" type="xs:unsignedByte"/>
    <xs:element name="Sender" type="xs:string"/>
    <xs:element name="CalendarType" type="xs:integer"/>

```

```

<xs:element name="IsLeapMonth" type="xs:unsignedByte"/>
<xs:element name="AccountId" type="xs:string"/>
<xs:element name="FirstDayOfWeek" type="xs:unsignedByte"/>
<xs:element name="MeetingMessageType" type="xs:unsignedByte"/>
</xs:schema>

```

The portion of the AirSyncBase namespace used by the Email class is defined as follows. For the complete AirSyncBase XSD, see [\[MS-ASAIRS\]](#) section 2.2.

```

<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:airsyncbase="AirSyncBase:" xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns="AirSyncBase:" targetNamespace="AirSyncBase:" elementFormDefault="qualified"
  attributeFormDefault="unqualified">
  <xs:element name="Body"/>
  <xs:element name="BodyPart"/>
  <xs:element name="Attachments">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="Attachment"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="NativeBodyType" type="xs:unsignedByte"/>
</xs:schema>

```

The portion of the RightsManagement namespace used by the Email class is defined as follows. For the complete RightsManagement XSD, see [\[MS-ASRM\]](#) section 2.2.

```

<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:rightsmanagement="RightsManagement:"
  xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns="RightsManagement:"
  targetNamespace="RightsManagement:" elementFormDefault="qualified"
  attributeFormDefault="unqualified">
  <xs:element name="RightsManagementLicense">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="TemplateId" type="rm:NonEmptyStringType"/>
        <xs:element name="TemplateName" type="rm:NonEmptyStringType"/>
        <xs:element name="TemplateDescription" type="rm:NonEmptyStringType"/>
        <xs:element name="EditAllowed" type="xs:boolean"/>
        <xs:element name="ReplyAllowed" type="xs:boolean"/>
        <xs:element name="ReplyAllAllowed" type="xs:boolean"/>
        <xs:element name="ForwardAllowed" type="xs:boolean"/>
        <xs:element name="ModifyRecipientsAllowed" type="xs:boolean"/>
        <xs:element name="ExtractAllowed" type="xs:boolean"/>
        <xs:element name="PrintAllowed" type="xs:boolean"/>
        <xs:element name="ExportAllowed" type="xs:boolean"/>
        <xs:element name="ProgrammaticAccessAllowed" type="xs:boolean"/>
        <xs:element name="Owner" type="xs:boolean"/>
        <xs:element name="ContentExpiryDate" type="xs:dateTime"/>
        <xs:element name="ContentOwner" type="rm:NonEmptyStringType"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>

```

For more details about how these elements are used within the **ItemOperations**, **Search** and **Sync** commands, see sections [3.1.5](#) and [3.2.5](#).

2.2.1 Namespaces

This specification defines and references various **XML namespaces** using the mechanisms specified in [\[XMLNS\]](#). Although this specification associates a specific XML namespace prefix for each XML namespace that is used, the choice of any particular XML namespace prefix is implementation-specific and not significant for interoperability.

Prefix	Namespace URI	Reference
None	Email	
email2	Email2	
airsync	AirSync	[MS-ASCMD] section 2.2.2.19
airsyncbase	AirSyncBase	[MS-ASAIRS]
calendar	Calendar	[MS-ASCAL]
contacts	Contacts	[MS-ASCNTC]
contacts2	Contacts2	[MS-ASCNTC]
documentlibrary	DocumentLibrary	[MS-ASDOC]
itemoperations	ItemOperations	[MS-ASCMD] section 2.2.2.8
notes	Notes	[MS-ASNOTE]
rm	RightsManagement	[MS-ASRM]
search	Search	[MS-ASCMD] section 2.2.2.14
tasks	Tasks	[MS-ASTASK]
xs	http://www.w3.org/2001/XMLSchema	[XMLSCHEMA1]

2.2.2 Elements

The following tables summarize the set of common XML schema element definitions defined by this specification. XML schema element definitions that are specific to a particular operation are described with that operation.

The E-mail class elements listed in the following table do not have any child elements in the command request or response. If child elements are included in a Sync request, the server returns a <Status> value of 6 in the **Sync** response.

Element	Description
To	The list of recipients .
Cc	The list of secondary recipients.
From	The e-mail address of the individual who sent the message.

Element	Description
Subject	The subject of the e-mail message.
ReplyTo	The e-mail address to which replies will be addressed by default.
DateReceived	The date and time that the message was received on the server.
DisplayTo	The names of the primary recipients of the message.
ThreadTopic	The topic used in conversation reading.
Importance	The importance of the message, as determined by the sender.
Read	Specifies whether the message has been read.
airsyncbase:Attachments	The collection of <airsyncbase:Attachment> elements.
airsyncbase:Attachment	The e-mail attachment.
DisplayName	The name of the attachment file as displayed to the user.
email2:UmAttOrder	The order of electronic voice mail attachments.
email2:UmAttDuration	The duration of electronic voicemail attachments.
airsyncbase:Body	A description of the body text, along with its data.
MessageClass	The message class of this e-mail message.
MeetingRequest	A meeting request accompanying an e-mail message.
AllDayEvent	Indicates whether the calendar item is an all-day event.
StartTime	The date and time that the <MeetingRequest> element starts.
DtStamp	The date and time that the calendar item was created.
EndTime	The date and time that the <MeetingRequest> element ends.
InstanceType	The type of calendar item.
Location	The location for the calendar item.
Organizer	The e-mail alias of the meeting organizer.
RecurrenceId	A specific instance of a recurring calendar item.
Reminder	The number of seconds prior to the calendar item's start time that a reminder is displayed.
ResponseRequested	Indicates whether the originator of the meeting has requested a response.
Recurrences	A collection of <Recurrence> elements.
Recurrence	A collection of <Recurrence> elements that describe when and how often this meeting recurs.
Type	The recurrence type of the recurring meeting.

Element	Description
Interval	The interval between recurrences of the recurring meeting.
Until	The end time of a series of recurrence meetings.
Occurrences	The number of occurrences before the series of recurring meeting ends.
WeekOfMonth	The week of the month of the recurring meeting.
DayOfMonth	The day of the month of the recurring meeting.
DayOfWeek	The day of the week of the recurring meeting.
MonthOfYear	The month of the year of the recurring meeting.
email2:CalendarType	The type of calendar associated with the recurrence.
email2:IsLeapMonth	Specifies whether the recurrence takes place in the leap month of the given year.
email2:FirstDayOfWeek	Specifies which day is considered the first day of the calendar week for this recurrence.
Sensitivity	The confidentiality level of the meeting request.
BusyStatus	The intended Busy status for the meeting request.
TimeZone	The time zone specified when the calendar item was created.
GlobalObjId	A random 76-digit hexadecimal ID generated by the client for the meeting request.
DisallowNewTimeProposal	Indicates whether recipients can propose a new meeting time.
email2:MeetingMessageType	The type of the meeting message.
InternetCPID	The original code page ID from the MIME message.
Flag	The flag associated with the item, along with the item's current status.
tasks:Subject	The subject of the flag as it would appear in a task list.
Status	The current status of the flag.
FlagType	The value of the Flag To: follow up field.
tasks:DateCompleted	The date on which the flagged item was completed.
CompleteTime	The time at which the flagged item was marked as finished.
tasks:StartDate	The start date of the flagged item.
tasks:DueDate	The due date of the flagged item.
tasks:UtcStartDate	The Coordinated Universal Time (UTC) value of the local <tasks:StartDate>.
tasks:UtcDueDate	The UTC value of the local <tasks:DueDate>.

Element	Description
tasks:ReminderSet	Identifies whether a reminder has been set for this flagged item.
tasks:ReminderTime	The date and time that the reminder is scheduled to occur.
tasks:OrdinalDate	The time at which the client set the flag.
tasks:SubOrdinalDate	A string used to sort items.
airsyncbase:NativeBodyType	The format in which the item is stored on the server.
ContentClass	The content class of the data.
email2:UmCallerID	The callback telephone number of the person who called or left an electronic voice message.
email2:UmUserNotes	User notes related to an electronic voice message.
email2:ConversationId	A unique identifier for a conversation.
email2:ConversationIndex	A set of dates and times used by clients to generate a conversation tree view.
email2:LastVerbExecuted	The last action, such as reply or forward, which was taken on the message so that the client can display the appropriate icon.
email2:LastVerbExecutionTime	The time when the <email2:LastVerbExecuted> was performed on the message.
email2:ReceivedAsBcc	Indicates whether the recipient was blind carbon copied on a message.
email2:Sender	The user that actually sent the message when the message was not sent by the user identified by From .
Categories	The user-selected categories for this message.
Category	The category for this e-mail item.
airsyncbase:BodyPart	The unique message part of the requested message along with other meta-data properties .
email2:AccountId	The ID of the account that received the message.
rm:RightsManagementLicense	The rights management settings.

2.2.2.1 To

The <To> element is an optional element that specifies the list of primary recipients. It is defined as an element in the Email namespace.

The value of this element contains one or more e-mail addresses. If there are multiple e-mail addresses, then they are separated by commas.

The <To> element has a maximum length of 32,768 characters.

2.2.2.2 Cc

The <Cc> element is an optional element that specifies the list of secondary recipients of this message. It is defined as an element in the Email namespace.

The message is directed at the primary recipient as specified by the <To> element, but the secondary recipients also receive a copy of the message.

The value of this element contains one or more e-mail addresses. If there are multiple e-mail addresses, then they are separated by commas.

2.2.2.3 From

The <From> element is an optional element that specifies the e-mail address of the individual who sent this message. It is defined as an element in the Email namespace.

The <From> element has a maximum length of 32,768 characters.

2.2.2.4 Subject

The <Subject> element is an optional element that specifies the subject of the e-mail message. It is defined as an element in the Email namespace.

2.2.2.5 ReplyTo

The <ReplyTo> element is an optional element that specifies the e-mail address to which replies will be addressed by default. It is defined as an element in the Email namespace.

The value of this element contains one or more e-mail addresses. If there are multiple e-mail addresses, then they are separated by a semi-colon.

2.2.2.6 DateReceived

The <DateReceived> element is an optional element that specifies the date and time when this message was received by the current recipient. It is defined as an element in the Email namespace. The value of this element is a **dateTime** value, as specified in [\[MS-ASDTYPE\]](#).

2.2.2.7 DisplayTo

The <DisplayTo> element is an optional element that specifies the e-mail addresses of the primary recipients of this message. It is defined as an element in the Email namespace.

The value of this element contains one or more display names. If there are multiple display names, then they are separated by semi-colons.

2.2.2.8 ThreadTopic

The <ThreadTopic> element is an optional element that specifies the topic used for conversation threading. It is defined as an element in the Email namespace.

2.2.2.9 Importance

The <Importance> element is an optional element that specifies the importance of the message, as determined by the sender. It is defined as an element in the Email namespace.

The value of this element MUST be one of the following.

Value	Meaning
0	Low importance
1	Normal importance
2	High importance

If this element is omitted, then clients **MUST** assume 1 as the default.

2.2.2.10 Read

The <Read> element is an optional element that specifies whether the e-mail message has been viewed by the current recipient. It is defined as an element in the Email namespace.

A value of **TRUE** indicates the e-mail message was viewed; a value of **FALSE** indicates the e-mail message was not viewed.

The value of this element is a **boolean** value, as specified in [\[MS-ASDTYPE\]](#). If a non-**boolean** value is used in a **Sync** command request, the server responds with <Status> value 6.

2.2.2.11 airsncbase:Attachments

The <airsncbase:Attachments> element is an optional **container** ([\[MS-ASDTYPE\]](#) section 2.2) element that contains a collection of <airsncbase:Attachment> elements. It is defined as an element in the Email namespace.

The <airsncbase:Attachments> element can only have the following child element:

- <airsncbase:Attachment> (section [2.2.2.11.1](#)): This element is required.

The <airsncbase:Attachments> element is part of the AirSyncBase namespace, and is further specified in [\[MS-ASAIRS\]](#) section 2.2.2.6.

2.2.2.11.1 airsncbase:Attachment

The <airsncbase:Attachment> element is a required **container** element that represents an e-mail attachment. It is a child of the <airsncbase:Attachments> element (section [2.2.2.11](#)).

The <airsncbase:Attachment> element is part of the AirSyncBase namespace. The <airsncbase:Attachment> element and its child elements are specified in [\[MS-ASAIRS\]](#) section 2.2.2.6.1.

2.2.2.11.1.1 DisplayName

The <DisplayName> element is an optional child element of the <airsncbase:Attachment> element (section [2.2.2.11.1](#)) that specifies the name of the attachment file as displayed to the user. It is defined as an element in the AirSyncBase namespace.

The <DisplayName> element is further specified in [\[MS-ASAIRS\]](#) section 2.2.2.6.1.1.

2.2.2.11.1.2 email2:UmAttOrder

The <email2:UmAttOrder> element [<3>](#) is an optional child element of the <airsncbase:Attachment> element (section [2.2.2.11.1](#)) that identifies the order of electronic voice mail attachments. It is defined as an element in the Email2 namespace.

This value is set by the server and is read-only for the client.

The most recent voice mail attachment in an e-mail item MUST have a <email2:UmAttOrder> value of 1. Whenever a new electronic voice message associated with the same e-mail item is received, the new voice attachment is appended to the end of the list and all electronic voice attachment are renumbered.

This element MUST only be included on messages with a <MessageClass> prefix of IPM.Note.Microsoft.Voicemail, IPM.Note.RPMSG.Microsoft.Voicemail, or IPM.Note.Microsoft.Missed.Voice.

2.2.2.11.1.3 email2:UmAttDuration

The <email2:UmAttDuration> element [<4>](#) is an optional child of the <airsyncbase:Attachment> element that specifies the duration of the most recent electronic voice mail attachment in seconds. It is defined as an element in the Email2 namespace.

This element MUST only be used for electronic voice message attachments. This value is set by the server and is read-only for the client.

This element MUST only be included on messages with a <MessageClass> prefix of IPM.Note.Microsoft.Voicemail, IPM.Note.RPMSG.Microsoft.Voicemail, or IPM.Note.Microsoft.Missed.Voice.

2.2.2.12 airsynchronbase:Body

The <airsyncbase:Body> element is an optional **container** element that contains details about the body of an e-mail in command responses.

When included in a **Sync**, **Search**, or **ItemOperations** command response, the <airsyncbase:Body> element can contain the following child elements:

- <Type> ([\[MS-ASAIRS\]](#) section 2.2.2.2.1). This element is required.
- <EstimatedDataSize> ([\[MS-ASAIRS\]](#) section 2.2.2.4.2). This element is optional.
- <Truncated> ([\[MS-ASAIRS\]](#) section 2.2.2.4.3). This element is optional.
- <Data> ([\[MS-ASAIRS\]](#) section 2.2.2.4.4). This element is optional in **Sync** and **Search** responses and is only included if a nonzero <Preview> ([\[MS-ASAIRS\]](#) section 2.2.2.2.4) value is included in the request. This element is optional in **ItemOperations** responses and is only included if a nonzero <TruncationSize> ([\[MS-ASAIRS\]](#) section 2.2.2.2.2) value was included in the request and the <AllOrNone> ([\[MS-ASAIRS\]](#) section 2.2.2.2.3) element does not restrict content from being returned in the response.

The <airsyncbase:Body> element is part of the AirSyncBase namespace, and is further specified in [\[MS-ASAIRS\]](#) section 2.2.2.4.

2.2.2.13 MessageClass

The <MessageClass> element is an optional element that specifies the message class of this e-mail message. It is defined as an element in the Email namespace.

The <MessageClass> value is provided as a hint to the client to aid in processing the item. The protocol does not validate that the item has the correct <MessageClass> value, nor does it update incorrect values.

The value of the <MessageClass> element SHOULD be one of the following values. Messages with values not contained in the following table will be opened as normal e-mail messages.

Value	Meaning
IPM.Note	Normal e-mail message.
IPM.Note.SMIME	The message is encrypted and can also be signed.
IPM.Note.SMIME.MultipartSigned	The message is clear signed.
IPM.Note.Receipt.SMIME	The message is a secure read receipt .
IPM.InfoPathForm	An InfoPath form, as specified by [MS-IPFFX] .
IPM.Schedule.Meeting.Request	Meeting request.
IPM.Notification.Meeting	Meeting notification.
IPM.Post	Post.
IPM.Octel.Voice	Octel voice message.
IPM.Voicenotes	Electronic voice notes.
IPM.Sharing	Shared message.

In addition, certain administrative messages have message classes that are derived from the message classes in the preceding table. The format is a prefix of REPORT and a suffix that indicates the type of report. For those administrative messages, the value of the <MessageClass> element MUST be one of the following values.

MessageClass	Description
REPORT.IPM.NOTE.NDR	Non-delivery report (NDR) for a standard message.
REPORT.IPM.NOTE.DR	Delivery receipt for a standard message.
REPORT.IPM.NOTE.DELAYED	Delivery receipt for a delayed message.
*REPORT.IPM.NOTE.IPNRN	Read receipt for a standard message.
*REPORT.IPM.NOTE.IPNNRN	Non-read receipt for a standard message.
REPORT.IPM.SCHEDULE. MEETING.REQUEST.NDR	NDR for a meeting request.
REPORT.IPM.SCHEDULE.MEETING.RESP.POS.NDR	NDR for a positive meeting response (accept).
REPORT.IPM.SCHEDULE.MEETING.RESP.TENT.NDR	NDR for a Tentative meeting response.
REPORT.IPM.SCHEDULE.MEETING.CANCELED.NDR	NDR for a cancelled meeting notification.
REPORT.IPM.NOTE.SMIME.NDR	NDR for a Secure MIME (S/MIME) encrypted and opaque-signed message.
*REPORT.IPM.NOTE.SMIME.DR	Delivery receipt for an S/MIME encrypted and opaque-signed message.

MessageClass	Description
*REPORT.IPM.NOTE.SMIME.MULTIPARTSIGNED.NDR	NDR for an S/MIME clear signed message.
*REPORT.IPM.NOTE.SMIME.MULTIPARTSIGNED.DR	Delivery receipt for an S/MIME clear signed message.

2.2.2.14 MeetingRequest

The <MeetingRequest> element is an optional **container** element. It is defined as an element in the Email namespace.

The <MeetingRequest> element is included message data when the message is a meeting request and the client's user is an **attendee**. The <MeetingRequest> element is not included in the message content of calendar items in the **Calendar folder** or normal e-mail messages. If a message contains the <MeetingRequest> element, the client can respond to the meeting request by using the **MeetingResponse** command, as specified in [\[MS-ASCMD\]](#) section 2.2.2.9.

The <MeetingRequest> element can only have the following child elements:

- <AllDayEvent> (section [2.2.2.14.1](#)): This element is optional.
- <StartTime> (section [2.2.2.14.2](#)): One instance of this element is required.
- <DtStamp> (section [2.2.2.14.3](#)): One instance of this element is required.
- <EndTime> (section [2.2.2.14.4](#)): One instance of this element is required.
- <InstanceType> (section [2.2.2.14.5](#)): One instance of this element is required.
- <Location> (section [2.2.2.14.6](#)): This element is optional.
- <Organizer> (section [2.2.2.14.7](#)): This element is optional.
- <RecurrenceId> (section [2.2.2.14.8](#)): This element is optional.
- <Reminder> (section [2.2.2.14.10](#)): This element is optional.
- <ResponseRequested> (section [2.2.2.14.11](#)): This element is optional.
- <Recurrences> (section [2.2.2.14.9](#)): This element is optional.
- <Sensitivity> (section [2.2.2.14.12](#)): This element is optional.
- <BusyStatus> (section [2.2.2.14.13](#)): This element is optional.
- <TimeZone> (section [2.2.2.14.14](#)): One instance of this element is required.
- <GlobalObjId> (section [2.2.2.14.15](#)): One instance of this element is required.
- <DisallowNewTimeProposal> (section [2.2.2.14.16](#)): This element is optional.
- <MeetingMessageType> (section [2.2.2.14.17](#)): One instance of this element is required.

2.2.2.14.1 AllDayEvent

The <AllDayEvent> element is an optional child element of the <MeetingRequest> element (section [2.2.2.14](#)) that specifies whether the meeting request is for an all-day event. It is defined as an element in the Email namespace.

If the value of this element is set to 1, then the attached meeting request is an all-day event. If the value of this element is set to 0, then the attached meeting request is not an all-day event.

The value of this element is an **unsignedByte** value, as specified in [\[MS-ASDTYPE\]](#) section 2.7.

2.2.2.14.2 StartTime

The <StartTime> element is a required child element of the <MeetingRequest> element (section [2.2.2.14](#)) that specifies when this meeting begins. It is defined as an element in the Email namespace.

The value of this element is a **dateTime** value, as specified in [\[MS-ASDTYPE\]](#) section 2.3.

2.2.2.14.3 DtStamp

The <DtStamp> element is a required child element of the <MeetingRequest> element (section [2.2.2.14](#)) that specifies the date and time this calendar item was created. It is defined as an element in the Email namespace.

The value of this element is a **dateTime** value, as specified in [\[MS-ASDTYPE\]](#) section 2.3.

2.2.2.14.4 EndTime

The <EndTime> element is a required child element of the <MeetingRequest> element (section [2.2.2.14](#)) that specifies the date and time when the meeting ends. It is defined as an element in the Email namespace.

The value of this element is a **dateTime** value, as specified in [\[MS-ASDTYPE\]](#) section 2.3.

2.2.2.14.5 InstanceType

The <InstanceType> element is a required child element of the <MeetingRequest> element (section [2.2.2.14](#)) that specifies whether this is a single or recurring appointment. It is defined as an element in the Email namespace.

The value of this element is an enumeration which MUST be one of the following values:

Meaning	Meaning
0	Single appointment.
1	Master recurring appointment.
2	Single instance of a recurring appointment.
3	Exception to a recurring appointment.

2.2.2.14.6 Location

The <Location> element is an optional child element of the <MeetingRequest> element (section [2.2.2.14](#)) that specifies where this meeting will be held. This element has a maximum string length of 32,768 characters. It is defined as an element in the Email namespace. [<5>](#)

2.2.2.14.7 Organizer

The <Organizer> element is an optional child element of the <MeetingRequest> element (section [2.2.2.14](#)) that specifies who organized this meeting. It is defined as an element in the Email namespace.

The value of this element is an e-mail address as specified in [\[MS-ASDTYPE\]](#) section 2.6.2.

2.2.2.14.8 RecurrenceId

The <RecurrenceId> element is an optional child element of the <MeetingRequest> element (section [2.2.2.14](#)) that specifies the date and time of this recurrence of a recurring meeting. It is defined as an element in the Email namespace.

The server MUST include this element in response messages to indicate a single instance exception to a recurring meeting; otherwise, the server MUST NOT include this element.

The value of this element MUST be the date and time corresponding to this instance of a recurring item.

The value of this element is a **dateTime** value, as specified in [\[MS-ASDTYPE\]](#) section 2.3.

2.2.2.14.9 Recurrences

The <Recurrences> element is an optional **container** child element of the <MeetingRequest> element (section [2.2.2.14](#)). It is defined as an element in the Email namespace.

If the <Recurrences> element is included in the <MeetingRequest> element, it identifies that the meeting has a **recurrence pattern**.

The <Recurrences> element can only have the following child element:

- <Recurrence> (section [2.2.2.14.9.1](#)): This element is required.

2.2.2.14.9.1 Recurrence

The <Recurrence> element is a **container** element that describes when and how often this meeting request recurs. It is defined as an element in the Email namespace.

The <Recurrence> element is a required child of the <Recurrences> element (section [2.2.2.14.9](#)).

The <Recurrences> element can only have the following child elements:

- <Type> (section [2.2.2.14.9.1.1](#)): One instance of this element is required.
- <Interval> (section [2.2.2.14.9.1.2](#)): One instance of this element is required.
- <Until> (section [2.2.2.14.9.1.3](#)): One instance of this element is required.
- <Occurrences> (section [2.2.2.14.9.1.4](#)): One instance of this element is required.

- <WeekOfMonth> (section [2.2.2.14.9.1.5](#)): This element is optional.
- <DayOfMonth> (section [2.2.2.14.9.1.6](#)): This element is optional.
- <DayOfWeek> (section [2.2.2.14.9.1.7](#)): This element is optional.
- <MonthOfYear> (section [2.2.2.14.9.1.8](#)): This element is optional.
- <email2:CalendarType> (section [2.2.2.14.9.1.9](#)): This element is optional.
- <email2:IsLeapMonth> (section [2.2.2.14.9.1.10](#)): This element is optional.
- <email2:FirstDayOfWeek> (section [2.2.2.14.9.1.11](#)): This element is optional.

2.2.2.14.9.1.1 Type

The <Type> element is a required child element of the <Recurrence> element (section [2.2.2.14.9.1](#)) that specifies how this meeting recurs. It is defined as an element in the Email namespace.

The value of this element MUST be one of the following:

Value	Meaning
0	Recurs daily.
1	Recurs weekly.
2	Recurs monthly on the Nth day of the month.
3	Recurs monthly.
5	Recurs yearly on the Nth day of the Nth month each year.
6	Recurs yearly on the Nth day of the week of the Nth month each year.

2.2.2.14.9.1.2 Interval

The <Interval> element is a required child element of the <Recurrence> element (section [2.2.2.14.9.1](#)) that specifies the interval between recurrences. It is defined as an element in the Email namespace.

An <Interval> value of 1 indicates that the meeting occurs every week, month, or year, depending upon the value of <Type>. An <Interval> value of 2 indicates that the meeting occurs every other week, month, or year.

For examples showing how to set <MeetingRequest> recurrence intervals, see section [4.2](#).

2.2.2.14.9.1.3 Until

The <Until> element is a required child element of the <Recurrence> element (section [2.2.2.14.9.1](#)) that specifies the end date and time of a recurring meeting. It is defined as an element in the Email namespace.

The value of this element is a **dateTime** value, as specified in [\[MS-ASDTYPE\]](#) section 2.3.

2.2.2.14.9.1.4 Occurrences

The <Occurrences> element is an optional child element of the <Recurrence> element (section [2.2.2.14.9.1](#)) that specifies the number of occurrences before the series of recurring meetings ends. It is defined as an element in the Email namespace.

2.2.2.14.9.1.5 WeekOfMonth

The <WeekOfMonth> element is an optional child element of the <Recurrence> element (section [2.2.2.14.9.1](#)) that specifies the week of the month in which this meeting recurs. It is defined as an element in the Email namespace.

This element is required when the <Type> element is set to 6 (recurs yearly on the Nth day of the week of the Nth month each year).

2.2.2.14.9.1.6 DayOfMonth

The <DayOfMonth> element is an optional child element of the <Recurrence> element (section [2.2.2.14.9.1](#)) that specifies the day of the month on which this meeting recurs. It is defined as an element in the Email namespace.

This element is required when the <Type> element is set to 2 (recurs monthly on the Nth day of the month), or 5 (recurs yearly on the Nth day of the Nth month each year).

For examples showing how to set <MeetingRequest> recurrence intervals, see section [4.2](#).

2.2.2.14.9.1.7 DayOfWeek

The <DayOfWeek> element is an optional child element of the <Recurrence> element (section [2.2.2.14.9.1](#)) that specifies the day of the week on which this meeting recurs. It is defined as an element in the Email namespace.

This element is required when the <Type> element is set to 1 (recurs weekly), or 6 (recurs yearly on the Nth day of the week of the Nth month each year).

The value of this element MUST be the sum of a minimum of one and a maximum of seven independent values from the following table.

Value	Meaning
1	Sunday
2	Monday
4	Tuesday
8	Wednesday
16	Thursday
32	Friday
64	Saturday

These values can be added together to specify that the meeting occurs on more than one day of the week.

For examples showing how to set different <MeetingRequest> recurrence intervals, see section [4.2](#).

2.2.2.14.9.1.8 MonthOfYear

The <MonthOfYear> element is an optional child element of the <Recurrence> element (section [2.2.2.14.9.1](#)) that specifies the month of the year in which this meeting recurs. It is defined as an element in the Email namespace.

This element is required when the <Type> element is set to 6, indicating that the meeting recurs yearly on the nth day of the week of the nth month.

2.2.2.14.9.1.9 email2:CalendarType

The <email2:CalendarType> [<6>](#) element is an optional child element of the <Recurrence> element (section [2.2.2.14.9.1](#)) that specifies the type of calendar associated with the recurrence. This element is required in server responses and is optional in client requests. A default value of "0" is used if the value is not specified. It is defined as an element in the Email2 namespace.

The following table lists valid values for the <email2:CalendarType> element.

Value	Meaning
0	Default
1	Gregorian
2	Gregorian US
3	Japan
4	Taiwan
5	Korea
6	Hijri
7	Thai
8	Hebrew
9	GregorianMeFrench
10	Gregorian Arabic
11	Gregorian translated English
12	Gregorian translated French
14	Japanese Lunar
15	Chinese Lunar
20	Korean Lunar

Clients that send an unsupported <email2:CalendarType> value to the server will receive an error.

2.2.2.14.9.1.10 email2:IsLeapMonth

The <email2:IsLeapMonth>[<7>](#) element is an optional child element of the <Recurrence> element (section [2.2.2.14.9.1](#)) that specifies whether the recurrence takes place in the leap month of the given year. It is defined as an element in the Email2 namespace.

This element is required in server responses and is optional in client requests. A default value of FALSE (0) is used if the value is not specified.

2.2.2.14.9.1.11 email2:FirstDayOfWeek

The <email2:FirstDayOfWeek>[<8>](#) element is an optional child element of the <Recurrence> element (section [2.2.2.14.9.1](#)) that specifies which day is considered the first day of the calendar week for this recurrence. It is defined as an element in the Email2 namespace.

A command request has a maximum of one <email2:FirstDayOfWeek> element per <Recurrence> element (section [2.2.2.14.9.1](#)).

A command response has a maximum of one <email2:FirstDayOfWeek> element per <Recurrence> element.

This element disambiguates recurrences when attendees live across localities that define a different starting day for the calendar week. If this element is not included in the client request, the server SHOULD identify the first day of the week for this recurrence according to the preconfigured options of the user creating the calendar item.

The value of the <email2:FirstDayOfWeek> element MUST be one of the following. If the client uses the **Sync** command to transmit a value not included in this table, the server MUST return protocol status error 6. **Sync** command status values are specified in [\[MS-ASCMD\]](#) section 2.2.2.19.2.1.1.

Value	Description
0	Sunday
1	Monday
2	Tuesday
3	Wednesday
4	Thursday
5	Friday
6	Saturday

2.2.2.14.10 Reminder

The <Reminder> element is an optional child element of the <MeetingRequest> element (section [2.2.2.14](#)) that specifies the number of seconds prior to the calendar item's start time that a reminder will be displayed. It is defined as an element in the Email namespace.

2.2.2.14.11 ResponseRequested

The <ResponseRequested> element is an optional child element of the <MeetingRequest> element ([2.2.2.14](#)) that specified whether the organizer has requested a response to this meeting request. It is defined as an element in the Email namespace.

A value of 1 indicates a response is requested; a value of 0 indicates a response is not requested.

2.2.2.14.12 Sensitivity

The <Sensitivity> element is an optional child element of the <MeetingRequest> element (section [2.2.2.14](#)) that specifies the confidentiality level of the meeting request. It is defined as an element in the Email namespace.

The value of this element MUST be one of the following values.

Value	Meaning
0	Normal
1	Personal
2	Private
3	Confidential

If this element is missing, then a default of 0 MUST be assumed.

2.2.2.14.13 BusyStatus

The <BusyStatus> element is an optional child element of the <MeetingRequest> element (section [2.2.2.14](#)) that specifies the busy status of the recipient for the meeting, once the meeting request is accepted. It is defined as an element in the Email namespace.

The value of this element MUST be one of the following values.

Value	Meaning
0	Free
1	Tentative
2	Busy
3	Out of Office (OOF)

If this element is missing, then a default of 1 MUST be assumed.

2.2.2.14.14 TimeZone

The <TimeZone> element is a required child element of the <MeetingRequest> element (section [2.2.2.14](#)) that specifies the time zone specified when the calendar item was created. It is defined as an element in the Email namespace.

The value of this element is a **String** with a <TimeZone> format, as specified in [\[MS-ASDTYPE\]](#) section 2.6.4.

2.2.2.14.15 GlobalObjId

The <GlobalObjId> element is a required child element of the <MeetingRequest> element (section 2.2.2.14) that contains a random 76-digit hexadecimal ID generated by the client for the meeting request. It is defined as an element in the Email namespace.

Clients that need to determine whether the <GlobalObjId> for a meeting request corresponds to an existing **calendar object** in the Calendar folder need to convert the <GlobalObjId> to a <UID> ([MS-ASCAL] section 2.2.2.14) to make the comparison. In order to convert the <GlobalObjId> to a <UID>, do the following:

1. Base64 decode the <GlobalObjId> value to determine its length.
2. Determine whether the <GlobalObjId> is an OutlookID or a vCal ID. The <GlobalObjId> is an OutlookID if any of the following conditions are true:
 - If the length of the <GlobalObjId> is less than 53 bytes.
 - If bytes 41-48 of the <GlobalObjId> value do not equal "vCal-Uid".
 - If the value of bytes 37-40, which represent the length of the data that follows, are less than 13 or greater than the remaining length of the <GlobalObjId> value.
3. If the <GlobalObjId> is an OutlookID, hex encode the entire base64 decoded <GlobalObjId>, and zero out bytes 17-20. The resulting value is the <UID> value.
4. If the <GlobalObjId> is a vCal ID, the length of the <UID> to be extracted is equal to the length of the data, as specified bytes 37-40, minus 12 bytes for the vCal marker, minus one byte for null-terminating <00> byte at the end of the vCal ID.
5. Using the length of the <UID> calculated in the previous step, extract that number of bytes beginning at byte 53. These extracted bytes are the <UID> value.

The following examples demonstrate how a <GlobalObjId> is converted to a <UID>.

Example 1

1. Given the following <GlobalObjId> value:

```
GlobalObjId=BAAAAIIA4AB0xbcQGoLgCAfUCRDgQMnBJoXEAQAAAAAAAAAEAAAAvW7UtuTulOnjnhns3jvM=
```

2. Base64 decoded, the <GlobalObjId> is equal to:

```
Bytes 1-16: <04><00><00><00><82><00><E0><00><74><C5><B7><10><1A><82><E0><08>
Bytes 17-20: <07><D4><09><10>
Bytes 21-36: <E0><40><C9><C1><26><85><C4><01><00><00><00><00><00><00><00>
Bytes 37-40: <10><00><00><00>
Bytes 41-56: <0B><F0><ED><4B><6E><4E><E9><4E><9E><39><E3><86><7B><37><8E><F3>
```

3. Because bytes 41-48 do not equal "vCal-Uid", this <GlobalObjId> is an OutlookID. Bytes 17-20 are converted to zeros and the entire value is hex encoded, resulting in the following <UID> value:

```
UID=040000008200E00074C5B7101A82E00800000000E040C9C12685C401000000000000000100000000B
F0ED4B6E4EE94E9E39E3867B378EF3
```

Example 2

1. Given the following <GlobalObjId> value:

```
GlobalObjID=AAAAAIIA4AB0xbCQGOLgCAAAAAAAAAAAAAAAAAAAAAAAAAAMwAAAHZDYWwtVWlkaQAAAHs4MT
QxMkQzQy0yQTI0LTRFOUQtQjIwRS0xMUy3QkJFOTI3OTI9AA==
```

2. Base64 decoded, the <GlobalObjID> is equal to:

```
Bytes 1-16: <04><00><00><00><82><00><E0><00><74><C5><B7><10><1A><82><E0><08>
Bytes 17-20: <00><00><00><00>
Bytes 21-36: <00><00><00><00><00><00><00><00><00><00><00><00><00><00><00><00>
Bytes 37-40: <33><00><00><00>
Bytes 41-52: vCal-Uid<01><00><00><00>
Bytes 53-91: {81412D3C-2A24-4E9D-B20E-11F7BBE92799}<00>
```

3. Bytes 37-40 indicate the length of the data to follow is 51 bytes. $51 - 13 = 38$ bytes for the length of the <UID>.
4. The 38 bytes beginning at byte 53 result in the <UID> value:

```
UID={81412D3C-2A24-4E9D-B20E-11F7BBE92799}
```

2.2.2.14.16 DisallowNewTimeProposal

The <DisallowNewTimeProposal> element [<9>](#) is an optional child element of the <MeetingRequest> element (section [2.2.2.14](#)) that indicates whether recipients can propose a new meeting time. If the value is not specified, the value defaults to zero (0), meaning that new time proposals are allowed. A nonzero value indicates that new time proposals are not allowed. <DisallowNewTimeProposal> is defined as an element in the Email namespace.

The value of this element is an **unsignedByte** value, as specified in [\[MS-ASDTYPE\]](#) section 2.7.

2.2.2.14.17 email2:MeetingMessageType

The <email2:MeetingMessageType> element [<10>](#) is a required child element of the <MeetingRequest> element (section [2.2.2.14](#)) that specifies the type of meeting message. It is defined as an element in the Email2 namespace.

The value of this element is an **unsignedByte** value, as specified in [\[MS-ASDTYPE\]](#) section 2.7.

The <email2:MeetingMessageType> value is not change tracked within e-mail messages, and therefore is not updated if the value is changed after the meeting request is sent to the client.

The value of this element MUST be one of the following.

Value	Description
0	A silent update was performed, or the message type is unspecified.
1	Initial meeting request.
2	Full update.
3	Informational update.
4	Outdated. A newer meeting request or meeting update was received after this message.
5	Identifies the delegator's copy of the meeting request.
6	Identifies that the meeting request has been delegated and the meeting request cannot be responded to.

If this element is missing, then a default of 0 MUST be assumed.

2.2.2.15 InternetCPID

The <InternetCPID> element is a required element that contains the original code page ID from the MIME message. It is defined as an element in the Email namespace.

2.2.2.16 Flag

The <Flag> element is an optional container element that defines the flag associated with this item, along with the item's current status. It is defined as an element in the Email namespace.

The <Flag> element either contains one or more instances of the child <Flag> elements, or if no flags are present, it SHOULD be included as an empty container, <Flag/>.

The <Flag> element can only have the following child elements:

- <tasks:Subject> (section [2.2.2.16.1](#)): This element is optional.
- <Status> (section [2.2.2.16.2](#)): This element is optional.
- <FlagType> (section [2.2.2.16.3](#)): This element is optional.
- <tasks:DateCompleted> (section [2.2.2.16.4](#)): This element is optional.
- <CompleteTime> (section [2.2.2.16.5](#)): This element is optional.
- <tasks:StartDate> (section [2.2.2.16.6](#)): This element is optional.
- <tasks:DueDate> (section [2.2.2.16.7](#)): This element is optional.
- <tasks:UtcStartDate> (section [2.2.2.16.8](#)): This element is optional.
- <tasks:UtcDueDate> (section [2.2.2.16.9](#)): This element is optional.
- <tasks:ReminderSet> (section [2.2.2.16.10](#)): This element is optional.
- <tasks:ReminderTime> (section [2.2.2.16.11](#)): This element is optional.
- <tasks:OrdinalDate> (section [2.2.2.16.12](#)): This element is optional.

- <tasks:SubOrdinalDate> (section [2.2.2.16.13](#)): This element is optional.

2.2.2.16.1 tasks:Subject

The <tasks:Subject> element is an optional child element of the <Flag> element (section [2.2.2.16](#)) that specifies the subject of the flag. It is defined as an element in the Tasks namespace.

The client or server SHOULD set the value of this element to the subject of the message when an item is flagged.

A maximum of one <tasks:Subject> element is allowed per <Flag>.

2.2.2.16.2 Status

The <Status> element is an optional child element of the <Flag> element (section [2.2.2.16](#)) that specifies the current status of the flag. It is defined as an element in the Email namespace.

The value of this element MUST be one of the following.

Value	Meaning
0	Clear the flag
1	Status is set to complete
2	Status is set to active

The **Sync** command response includes a <Status> value of 6 ([\[MS-ASCMD\]](#) section 2.2.2.19.2.1.1) if the flag <Status> is set to a value other than 0, 1 or 2.

A maximum of one <Status> element is allowed per <Flag>. The result of including more than one <Status> element per <Flag> is undefined. The server MAY return a protocol status error in response to such a command request.

2.2.2.16.3 FlagType

The <FlagType> element is an optional child element of the <Flag> element (section [2.2.2.16](#)) that specifies the flag type. It is defined as an element in the Email namespace.

<FlagType> is not required if the e-mail message is a meeting request or response.

This value is customizable, and is commonly set to "Flag for follow up" or "for Follow Up".

A maximum of one <FlagType> element is allowed per <Flag>.

2.2.2.16.4 tasks:DateCompleted

The <tasks:DateCompleted> element is an optional child element of the <Flag> element (section [2.2.2.16](#)) that identifies the date on which a flagged item was completed. It is defined as an element in the Tasks namespace.

The <tasks:DateCompleted> element is required to mark a flagged item as complete.

If the message includes a value for <tasks:DateCompleted>, then <CompleteTime> is also required.

The value of this element is a **dateTime** value, as specified in [\[MS-ASDTYPE\]](#) section 2.3.

A maximum of one <tasks:DateCompleted> element is allowed per Flag.

2.2.2.16.5 CompleteTime

The <CompleteTime> element is an optional child element of the <Flag> element (section [2.2.2.16](#)) that identifies the time at which a flagged item was marked as finished. It is defined as an element in the Email namespace.

The <CompleteTime> element is required to mark a flagged item as complete.

If the message includes a value for <CompleteTime>, then <DateCompleted> is also required. The value of this element is a **dateTime** value, as specified in [\[MS-ASDTYPE\]](#) section 2.3.

A maximum of one <CompleteTime> element is allowed per <Flag>.

2.2.2.16.6 tasks:StartDate

The <tasks:StartDate> element is an optional child element of the <Flag> element (section [2.2.2.16](#)) that specifies when this flagged item was begun. It is defined as an element in the Tasks namespace.

When a flag is being updated, <tasks:StartDate> MUST NOT occur after <tasks:DueDate>. <Status> value 6 is returned in the **Sync** response if this condition is not met.

To set a flag, <tasks:StartDate>, <tasks:DueDate>, <tasks:UtcStartDate>, and <tasks:UtcDueDate> MUST all be set, or MUST all be NULL. <Status> value 6 is returned in the **Sync** response if this condition is not met.

The value of this element is a **dateTime** value, as specified in [\[MS-ASDTYPE\]](#) section 2.3.

A maximum of one <tasks:StartDate> element is allowed per <Flag>. The result of including more than one <tasks:StartDate> element per <Flag> is undefined. The server MAY return a protocol status error in response to such a command request.

2.2.2.16.7 tasks:DueDate

The <tasks:DueDate> element is an optional child element of the <Flag> element (section [2.2.2.16](#)) that specifies when this flagged item is due. It is defined as an element in the Tasks namespace.

When a flag is being updated, <tasks:DueDate> MUST NOT occur before <tasks:StartDate>. <Status> value 6 is returned in the **Sync** response if this condition is not met.

To set a flag, <tasks:StartDate>, <tasks:DueDate>, <tasks:UtcStartDate>, and <tasks:UtcDueDate> MUST all be set, or MUST all be NULL. <Status> value 6 is returned in the **Sync** response if this condition is not met.

The value of this element is a **dateTime** value, as specified in [\[MS-ASDTYPE\]](#) section 2.3.

A maximum of one <tasks:DueDate> element is allowed per <Flag>. The result of including more than one <tasks:DueDate> element per <Flag> is undefined. The server MAY return a protocol status error in response to such a command request.

2.2.2.16.8 tasks:UtcStartDate

The <tasks:UtcStartDate> element is an optional child element of the <Flag> element (section [2.2.2.16](#)) that contains the UTC value of the local <tasks:StartDate>. It is defined as an element in the Tasks namespace.

When a flag is being updated, <tasks:UtcStartDate> MUST occur before <tasks:UtcDueDate>. <Status> value 6 is returned in the **Sync** response if this condition is not met.

To set a flag, <tasks:StartDate>, <tasks:DueDate>, <tasks:UtcStartDate>, and <tasks:UtcDueDate> MUST all be set, or MUST all be NULL. <Status> value 6 is returned in the **Sync** response if this condition is not met.

The value of this element is a **dateTime** value, as specified in [\[MS-ASDTYPE\]](#) section 2.3.

A maximum of one <tasks:UtcStartDate> element is allowed per <Flag>. The result of including more than one <tasks:UtcStartDate> element per <Flag> is undefined. The server MAY return a protocol status error in response to such a command request.

2.2.2.16.9 tasks:UtcDueDate

The <tasks:UtcDueDate> element is an optional child element of the <Flag> element (section [2.2.2.16](#)) that contains the UTC value of local <tasks:DueDate>. It is defined as an element in the Tasks namespace.

When a flag is being updated, <tasks:UtcDueDate> MUST NOT occur before <tasks:UtcStartDate>. <Status> value 6 is returned in the **Sync** response if this condition is not met.

To set a flag, <tasks:StartDate>, <tasks:DueDate>, <tasks:UtcStartDate>, and <tasks:UtcDueDate> MUST all be set, or MUST all be NULL. <Status> value 6 is returned in the **Sync** response if this condition is not met.

The value of this element is a **dateTime** value, as specified in [\[MS-ASDTYPE\]](#) section 2.3.

A maximum of one <tasks:UtcDueDate> element is allowed per <Flag>. The result of including more than one <tasks:UtcDueDate> element per <Flag> is undefined. The server MAY return a protocol status error in response to such a command request.

2.2.2.16.10 tasks:ReminderSet

The <tasks:ReminderSet> element is an optional child element of the <Flag> element (section [2.2.2.16](#)) that is 1 if a reminder has been set for this task; otherwise it is set to zero (0). The default value is zero (0). It is defined as an element in the Tasks namespace.

The value of this element is an **unsignedByte** value, as specified in [\[MS-ASDTYPE\]](#) section 2.7.

A maximum of one <tasks:ReminderSet> element is allowed per <Flag>. The result of including more than one <tasks:ReminderSet> element per <Flag> is undefined. The server MAY return a protocol status error in response to such a command request.

2.2.2.16.11 tasks:ReminderTime

The <tasks:ReminderTime> element is an optional child element of the <Flag> element (section [2.2.2.16](#)) that identifies the date and time that the reminder is scheduled to occur. It is defined as an element in the Tasks namespace.

<tasks:ReminderTime> MUST be set if <tasks:ReminderSet> is TRUE (1). A <Status> value of 6 is returned by the server in the **Sync** response if <tasks:ReminderSet> is TRUE (1) and <tasks:ReminderTime> is not included in the **Sync** request.

The value of this element is a **dateTime** value, as specified in [\[MS-ASDTYPE\]](#) section 2.3.

A maximum of one <tasks:ReminderTime> element is allowed per <Flag>. The result of including more than one <tasks:ReminderTime> element per <Flag> is undefined. The server MAY return a protocol status error in response to such a command request.

2.2.2.16.12 tasks:OrdinalDate

The <tasks:OrdinalDate> element is an optional child element of the <Flag> element (section [2.2.2.16](#)) that identifies the time at which the client set the flag. It is defined as an element in the Tasks namespace.

The value of this element is a **dateTime** value, as specified in [\[MS-ASDTYPE\]](#) section 2.3.

A maximum of one <tasks:OrdinalDate> element is allowed per <Flag>. The result of including more than one <tasks:OrdinalDate> element per <Flag> is undefined. The server MAY return a protocol status error in response to such a command request.

2.2.2.16.13 tasks:SubOrdinalDate

The <tasks:SubOrdinalDate> element is an optional child element of the <Flag> element (section [2.2.2.16](#)) that is used for sorting. The value can be any string and can be used for additional sorting if there are duplicate <tasks:OrdinalDate> values. It is defined as an element in the Tasks namespace.

The value of this element is a **string** value.

A maximum of one <tasks:SubOrdinalDate> element is allowed per <Flag>. The result of including more than one <tasks:SubOrdinalDate> element per <Flag> is undefined. The server MAY return a protocol status error in response to such a command request.

2.2.2.17 ContentClass

The <ContentClass> element is an optional element that specifies the content class of the data. For e-mail messages, the value of this element MUST be set to "urn:content-classes:message". It is defined as an element in the Email namespace.

2.2.2.18 airsynbase:NativeBodyType

The <airsynbase:NativeBodyType> element is an optional element that specifies how the e-mail message is stored on the server. It is defined as an element in the AirSyncBase namespace.

For details about the <airsynbase:NativeBodyType> element, see [\[MS-ASAIRS\]](#) section 2.2.2.7.

2.2.2.19 email2:UmCallerID

The <email2:UmCallerID> element [<11>](#) is an optional element that specifies the callback telephone number of the person who called or left an electronic voice message. It is defined as an element in the Email2 namespace.

This property is sent from the server to the client, and MUST NOT be sent from the client to the server. <Status> value 6 is returned in a **Sync** command response if the client attempts to send the

<email2:UmCallerId> element to the server. The <email2:UmCallerID> element is not included, or is empty, if the call originated as a private, blocked, or otherwise anonymous call. The **string** is either formatted as an E.164 telephone number (as specified in [\[E164\]](#)) or a session initiated protocol link to initiate a **Voice over Internet Protocol (VoIP)** call. For more details about session initiated protocol links, see [\[RFC3261\]](#) section 19.1.

This element MUST only be included on messages with one of the following <MessageClass> values:

- IPM.Note.Microsoft.Voicemail
- IPM.Note.Microsoft.Voicemail.UM
- IPM.Note.Microsoft.Voicemail.UM.CA
- IPM.Note.RPMSG.Microsoft.Voicemail
- IPM.Note.RPMSG.Microsoft.Voicemail.UM
- IPM.Note.RPMSG.Microsoft.Voicemail.UM.CA
- IPM.Note.Microsoft.Missed.Voice

Only one <email2:UmCallerID> element is allowed per message. In order to enable future VoIP scenarios, the server SHOULD send this field to clients regardless of the client's current VoIP capabilities.

2.2.2.20 email2:UmUserNotes

The <email2:UmUserNotes> element [<12>](#) is an optional property that contains user notes related to an electronic voice message. It is defined as an element in the Email2 namespace.

This property is sent from the server to the client, and MUST NOT be sent from the client to the server. <Status> value 6 is returned in a **Sync** command response if the client attempts to send the <email2:UmUserNotes> element to the server.

This element MUST only be included on messages with one of the following <MessageClass> values:

- IPM.Note.Microsoft.Voicemail
- IPM.Note.Microsoft.Voicemail.UM
- IPM.Note.Microsoft.Voicemail.UM.CA
- IPM.Note.RPMSG.Microsoft.Voicemail
- IPM.Note.RPMSG.Microsoft.Voicemail.UM
- IPM.Note.RPMSG.Microsoft.Voicemail.UM.CA
- IPM.Note.Microsoft.Missed.Voice

Only one <email2:UserNotes> element is allowed for any message. The server truncates notes larger than 16374 bytes, to 16374 bytes.

2.2.2.21 email2:ConversationId

The <email2:ConversationId> element [<13>](#) is a required byte-array that specifies a unique identifier for a conversation. It is defined as an element in the Email2 namespace.

The client MUST NOT change the <email2:ConversationId> value. <Status> value 6 is returned in the **Sync** response command when a <Change> is attempted on the <email2:ConversationId>.

The <email2:ConversationId> content is transferred as an opaque **binary large object (BLOB)** within the WBXML tags.

For more details about conversations, see [\[MS-ASCON\]](#).

2.2.2.22 email2:ConversationIndex

The <email2:ConversationIndex> element [<14>](#) is a required byte-array that contains a set of timestamps used by clients to generate a conversation tree view. The first timestamp identifies the date and time when the message was originally sent by the server. Additional timestamps are added when the message is forwarded or replied to. The <email2:ConversationIndex> element is defined as an element in the Email2 namespace.

For more details about the <email2:ConversationIndex> element, see [\[MS-ASCON\]](#) section 2.2.2.2.2.

2.2.2.23 email2:LastVerbExecuted

The <email2:LastVerbExecuted> element [<15>](#) is an optional element that indicates the last action, such as reply or forward, that was taken on the message so that the client can display the appropriate icon. It is defined as an element in the Email2 namespace.

The following table lists valid integer values for the element.

Value	Meaning
0	Unknown
1	REPLYTOSENDER
2	REPLYTOALL
3	FORWARD

2.2.2.24 email2:LastVerbExecutionTime

The <email2:LastVerbExecutionTime> element [<16>](#) is an optional **dateTime** element that indicates the time when the <email2:LastVerbExecuted> (section [2.2.2.23](#)) was performed on the message. It is defined as an element in the Email2 namespace.

2.2.2.25 email2:ReceivedAsBcc

The <email2:ReceivedAsBcc> element [<17>](#) is an optional **boolean** value that notifies the user that they were blind carbon copied on an e-mail. It is defined as an element in the Email2 namespace.

Clients MUST not change the <email2:ReceivedAsBcc> value. If the client changes the value, the server sets the <Status> element of the **Sync** command response to "6", as specified in [\[MS-ASCMD\]](#) section 2.2.2.19.2.1.1.

The <email2:ReceivedAsBcc> value is not sent if the value is FALSE (0).

2.2.2.26 email2:Sender

The <email2:Sender> element^{<18>} is an optional value that indicates that the message was not sent from the user identified by the <From> element. It is defined as an element in the Email2 namespace.

This element is set by the server and is read-only on the client. If the client attempts to change this value, then the server sets the <Status> element of the **Sync** command response to "6", as specified in [\[MS-ASCMD\]](#) section 2.2.2.19.2.1.1.

If included, the <email2:Sender> element identifies the user that actually sent the message, and the <From> element identifies the user on whose behalf the message was sent. Use of the <email2:Sender> element indicates that the sender of the item had **delegate** access to the <From> user's **mailbox**.

The client displays the message as <email2:Sender> on behalf of <From>.

The <email2:Sender> element is not sent to the client when <email2:Sender> and <From> have the same value, or when the <email2:Sender> element is NULL.

2.2.2.27 Categories

The <Categories> element^{<19>} is an optional container element that contains the user-selected categories for this message. The <Categories> element is defined as an element in the Email namespace.

An empty <Categories> element is included in a **Sync** <Add> command if no child <Category> elements have been set on the message. A **Sync** <Change> element containing an empty <Categories> element indicates that all the <Category> elements associated with the message have been removed. Not receiving a <Categories> element in a **Sync** <Change> message indicates that the <Category> value has not changed.

The <Categories> element can only have the following child element:

- <Category> (section [2.2.2.27.1](#)): This element is optional.

2.2.2.27.1 Category

The <Category> element^{<20>} is an optional child element of the <Categories> element (section [2.2.2.27](#)) that specifies a category for this e-mail item. It is defined as an element in the Email namespace.

A command request SHOULD limit itself to no more than 300 <Category> elements per <Categories> element.

2.2.2.28 airsynchronbase:BodyPart

The <airsynchronbase:BodyPart> element^{<21>} is an optional **container** element that encapsulates the unique message part of the requested message.

The <airsynchronbase:BodyPart> element is defined as an element in the AirSyncBase namespace. The <airsynchronbase:BodyPart> element and its child elements are specified in [\[MS-ASAIRS\]](#) section 2.2.2.5.

2.2.2.29 email2:AccountId

The <email2:AccountId> element [22](#) is an optional string property that specifies the ID of the account that received a message. It is defined as an element in the Email2 namespace.

The <email2:AccountId> SHOULD equal one of the <email2:AccountId> values included in the **Settings** command response ([\[MS-ASCMD\]](#) section 2.2.2.16.2), which lists the all aggregate accounts that the user subscribes to. In the event that the <email2:AccountId> does not equal one of the <email2:AccountId> values included in the **Settings** command response, the client SHOULD handle the case without error, as the message was aggregated from an unknown account or an account that has been removed from the aggregate account list.

The <email2:AccountId> element is not included for messages that were sent to the primary account, as identified by the <PrimarySmtAccount> element ([\[MS-ASCMD\]](#) [2.2.2.16.2.1.5.2.1.1.5.2](#)).

2.2.2.30 rm:RightsManagementLicense

The <rm:RightsManagementLicense> element [23](#) is an optional **container** element that encapsulates the rights management settings. The <rm:RightsManagementLicense> element and its child elements are defined as part of the **RightsManagement** namespace, as specified in [\[MS-ASRM\]](#) section 2.2.2.5.

3 Protocol Details

3.1 Client Details

3.1.1 Abstract Data Model

This section describes a conceptual model of possible data organization that an implementation maintains to participate in this protocol. The described organization is provided to facilitate the explanation of how the protocol behaves. This document does not mandate that implementations adhere to this model as long as their external behavior is consistent with that described in this document.

E-mail class: A set of elements that specifies an e-mail message. E-mail class data is included in command requests sent to the server when e-mail messages need to be retrieved or synchronized. For more details about processing command requests, see section [3.1.5](#).

Command request: A WBXML formatted message that adheres to the command schemas specified in [\[MS-ASCMD\]](#).

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Higher-Layer Triggered Events

3.1.4.1 Synchronize E-mail Between Client and Server

A client initiates **synchronization** of E-mail class data with the server by sending a **Sync** command request, as specified in section [3.1.5.3](#) and [\[MS-ASCMD\]](#) section 2.2.2.19.1.

3.1.4.2 Send E-mail

A client sends an e-mail message by using a **SendMail** command request. The **SendMail** command request is specified in [\[MS-ASCMD\]](#) section 2.2.2.15.1. An example **Sync** request and response message is provided in [\[MS-ASCMD\]](#) section 4.6.

3.1.4.3 Search E-mail

A client searches a **message database (MDB)** for E-mail class data by sending a **Search** command request to the server, as specified in section [3.1.5.2](#) and [\[MS-ASCMD\]](#) section 2.2.2.14.1.

3.1.4.4 Retrieve Individual E-mail

E-mail data for one or more individual e-mail items is requested by the client using an **ItemOperations** command request, which is a wrapper for the **Fetch** command. An **ItemOperations** command can contain multiple **Fetch** commands. The **ItemOperations** command request is specified in section [3.1.5.1](#) and [\[MS-ASCMD\]](#) section 2.2.2.8.2.

3.1.4.5 Send and Receive Meeting Requests

When a user creates an appointment or meeting on the client, the calendar item is added to the server by using the **Sync** command. If the meeting has attendees, the client uses the **SendMail** command to send meeting requests to the attendees. When the attendee synchronizes their Inbox folder, the **Sync** response from the server adds the new meeting request to the attendee's Inbox folder. When the attendee synchronizes their Calendar folder, the **Sync** response from the server adds the new calendar item to the attendee's Calendar folder. An example that shows how a new meeting is uploaded to the server, how the client sends the meeting request, how the new meeting request is added to the attendee's Inbox folder and how the new meeting is added to the attendee's Calendar folder is included in [\[MS-ASCMD\]](#) section 4.15.3.

3.1.4.6 Send Flag Updates to the Server

Basic flagging enables clients to flag e-mail messages, mark flags as complete, or clear flags. Flags are specified in section [2.2.2.16](#), and section [2.2.2.16.1](#) through section [2.2.2.16.13](#).

The following figure shows the life cycle of a flag.



Figure 1: Flag life cycle

For every flag update that is sent from the client, the server can update the flag on the e-mail message using the **Change** element of the **Sync** command. The server uses the logic provided in the following table to determine which flag action (clear, set, mark complete) to invoke when updating flag status based on the value of the <Status> element, as specified in section [2.2.2.16.2](#).

Action	Required Properties from Device
Flag an item (basic)	<Status> = 2 <FlagType> = "Flag for follow up" <tasks:StartDate> and <tasks:UtcStartDate> <tasks:DueDate> and <tasks:UtcDueDate> or <Status> = 2 <tasks:DateCompleted>
Flag an item (task flagging)	<Status> = 2 <tasks:Subject> = <user defined>

Action	Required Properties from Device
	<FlagType> = "Flag for follow up" <tasks:StartDate> and <tasks:UtcStartDate> <tasks:DueDate> and <tasks:UtcDueDate> <tasks:ReminderSet> <tasks:ReminderTime> or <Status> = 2 <tasks:DateCompleted>
Mark an item complete (basic)	<Status> = 1 <CompleteTime> <tasks:DateCompleted>
Mark an item complete (task flagging)	<Status> = 1 <CompleteTime> <tasks:DateCompleted>
Clearing the flag on an item	<Status> = 0 or Flag node empty
Clearing the flag on an item (task flagging)	<Status> = 0 or Flag node empty
Update the flag metadata (basic)	All updated properties
Update flag metadata (task flagging)	All updated properties

The **Sync** command response includes a <Status> value of "6" ([\[MS-ASCMD\]](#) section 2.2.2.19.2.1.1) if any of the required elements listed in the table are missing from the **Sync** request.

<FlagType> is not required if the item is a meeting request or response message.

3.1.5 Message Processing Events and Sequencing Rules

The following sections define how various elements of the E-mail class are used in the context of specific commands. For more details about the commands themselves, see [\[MS-ASCMD\]](#).

3.1.5.1 ItemOperations Command Request

A client sends the **ItemOperations** command request to the server to retrieve specific E-mail class items by using the <Fetch> element. An **ItemOperations** request can contain multiple <Fetch> elements.

Only the top level schema properties in the E-mail class can be included in an **ItemOperations** command request. The top level schema properties in the Email class are:

- <To>
- <Cc>
- <From>

- <ReplyTo>
- <DateReceived>
- <Subject>
- <DisplayTo>
- <Importance>
- <Read>
- <MessageClass>
- <MeetingRequest>
- <ThreadTopic>
- <InternetCPID>

The top level schema properties MUST be transmitted as children of the <Schema> element, as shown in the following **ItemOperations** command request schema.

Note: The Email class content in the schema is denoted with the <!--Email class content start--> and <!--Email class content end--> comments.

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:search="Search:" xmlns:email="Email:" xmlns:mstns="ItemOperations:"
xmlns:airsyncbase="AirSyncBase:" xmlns:doc="DocumentLibrary:" xmlns:airsync="AirSync:"
xmlns:rm="RightsManagement:" xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="ItemOperations:" elementFormDefault="qualified"
attributeFormDefault="qualified" id="ItemOperations">
  <xs:import namespace="DocumentLibrary:" schemaLocation="DocumentLibrary.xsd"/>
  <xs:import namespace="AirSync:" schemaLocation="AirSync.xsd"/>
  <xs:import namespace="AirSyncBase:" schemaLocation="AirSyncBase.xsd"/>
  <xs:import namespace="Email:" schemaLocation="Email.xsd"/>
  <xs:import namespace="Search:" schemaLocation="search-request.xsd"/>
  <xs:import namespace="RightsManagement:" schemaLocation="RightsManagement.xsd"/>
  <xs:element name="ItemOperations">
    <xs:complexType>
      <xs:choice maxOccurs="unbounded">
        <xs:element name="EmptyFolderContents">
          <xs:complexType>
            <xs:all>
              <xs:element ref="airsync:CollectionId"/>
              <xs:element name="Options" minOccurs="0">
                <xs:complexType>
                  <xs:all>
                    <xs:element name="DeleteSubFolders"/>
                  </xs:all>
                </xs:complexType>
              </xs:element>
            </xs:all>
          </xs:complexType>
        </xs:element>
        <xs:element name="Fetch" minOccurs="0" maxOccurs="unbounded">
          <xs:complexType>
            <xs:all>
              <xs:element name="Store">
```

```

<xs:simpleType>
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="256"/>
  </xs:restriction>
</xs:simpleType>
</xs:element>
<xs:element ref="airsync:ServerId" minOccurs="0"/>
<xs:element ref="airsync:CollectionId" minOccurs="0"/>
<xs:element ref="doc:LinkId" minOccurs="0"/>
<xs:element ref="search:LongId" minOccurs="0"/>
<xs:element ref="airsyncbase:FileReference" minOccurs="0"/>
<xs:element name="Options" minOccurs="0">
  <xs:complexType>
    <xs:choice maxOccurs="unbounded">
      <xs:element name="Schema" minOccurs="0" maxOccurs="unbounded">
        <xs:complexType>
          <xs:choice maxOccurs="unbounded">
            <!--Email class content start-->
            <xs:group ref="email:TopLevelSchemaProps"/>
            <!--Email class content end-->
          </xs:choice>
        </xs:complexType>
      </xs:element>
      <xs:element name="Range" minOccurs="0">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:pattern value="[0-9]{1,9}-[0-9]{1,9}"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element name="UserName" minOccurs="0">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:maxLength value="100"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element name="Password" minOccurs="0">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:maxLength value="256"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element ref="airsync:MIMESupport" minOccurs="0"/>
      <xs:element ref="airsyncbase:BodyPreference" minOccurs="0"
maxOccurs="256"/>
      <xs:element ref="airsyncbase:BodyPartPreference" minOccurs="0"/>
      <xs:element ref="rm:RightsManagementSupport" minOccurs="0"/>
    </xs:choice>
  </xs:complexType>
</xs:element>
<xs:element ref="rm:RemoveRightsManagementProtection" minOccurs="0"/>
</xs:all>
</xs:complexType>
</xs:element>
<xs:element name="Move">
  <xs:complexType>

```

```

<xs:all>
  <xs:element name="ConversationId" type="xs:string"/>
  <xs:element name="DstFldId">
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:maxLength value="64"/>
        <xs:minLength value="1"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:element>
  <xs:element name="Options" minOccurs="0">
    <xs:complexType>
      <xs:all>
        <xs:element name="MoveAlways" minOccurs="0"/>
      </xs:all>
    </xs:complexType>
  </xs:element>
</xs:all>
</xs:complexType>
</xs:element>
</xs:choice>
</xs:complexType>
</xs:element>
</xs:schema>

```

The **ItemOperations** command request is further specified in [\[MS-ASCMD\]](#) section 2.2.2.8.2.

3.1.5.2 Search Command Request

A client sends a **Search** command request to the server to retrieve E-mail class items that match the criteria specified by the client.

The elements for the E-mail class MUST NOT be included in a **Search** command request. <Status> value of 2 is returned as a child of the <Store> element in a **Search** response if this condition is not met.

The **Search** command request is further specified in [\[MS-ASCMD\]](#) section 2.2.2.14.1.

3.1.5.3 Sync Command Request

A client sends a **Sync** command request to the server to synchronize its E-mail class items for a specific user with the E-mail items currently stored by the server.

E-mail class elements MUST be transmitted as children of the <ApplicationData> element, as shown in the following **Sync** command request XSD.

The <ApplicationData> element can only contain the following Email class elements in a **Sync** <Change> request:

- <Flag>
- <Read>
- <Categories>

Email namespace elements that appear as children of the <ApplicationData> element in a **Sync** <Add> request are not used to synchronize Email class content; instead, those elements are used to synchronize SMS class content. For more details about the SMS class, see [\[MS-ASMS\]](#).

Note: The Email class content in the schema is denoted with the <!--Email class content start--> and <!--Email class content end--> comments.

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:tns="AirSync:" xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns:contacts="Contacts:" xmlns:contacts2="Contacts2:" xmlns:calendar="Calendar:"
  xmlns:email="Email:" xmlns:airsyncbase="AirSyncBase:" xmlns:tasks="Tasks:"
  xmlns:notes="Notes:" xmlns:rm="RightsManagement:" targetNamespace="AirSync:"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:import namespace="Contacts2:" schemaLocation="Contacts2.xsd"/>
  <xs:import namespace="Contacts:" schemaLocation="Contacts.xsd"/>
  <xs:import namespace="Email:" schemaLocation="Email.xsd"/>
  <xs:import namespace="Calendar:" schemaLocation="Calendar.xsd"/>
  <xs:import namespace="AirSyncBase:" schemaLocation="AirSyncBase.xsd"/>
  <xs:import namespace="Tasks:" schemaLocation="Tasks.xsd"/>
  <xs:import namespace="Notes:" schemaLocation="NotesClass.xsd"/>
  <xs:import namespace="RightsManagement:" schemaLocation="RightsManagement.xsd"/>
  <xs:element name="MIMESupport">
    <xs:simpleType>
      <xs:restriction base="xs:unsignedByte">
        <xs:minInclusive value="0"/>
        <xs:maxInclusive value="2"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:element>
  <xs:element name="CollectionId">
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:maxLength value="64"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:element>
  <xs:element name="ServerId">
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:maxLength value="64"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:element>
  <xs:element name="ConversationMode"/>
  <xs:element name="Options">
    <xs:complexType>
      <xs:choice maxOccurs="unbounded">
        <xs:element name="FilterType">
          <xs:simpleType>
            <xs:restriction base="xs:unsignedByte">
              <xs:minInclusive value="0"/>
              <xs:maxInclusive value="8"/>
            </xs:restriction>
          </xs:simpleType>
        </xs:element>
        <xs:element name="Class" type="xs:string"/>
        <xs:element name="MaxItems">
          <xs:simpleType>
            <xs:restriction base="xs:integer">
```



```

        <xs:minInclusive value="1"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:element>
</xs:choice>
</xs:complexType>
</xs:element>
<xs:element name="SyncKey">
  <xs:simpleType>
    <xs:restriction base="xs:string">
      <xs:maxLength value="64"/>
    </xs:restriction>
  </xs:simpleType>
</xs:element>
<xs:element name="Class" type="xs:string"/>
<xs:element name="Sync">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="Collections" minOccurs="0">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="Collection" minOccurs="0" maxOccurs="unbounded">
              <xs:complexType>
                <xs:sequence>
                  <xs:element name="SyncKey">
                    <xs:simpleType>
                      <xs:restriction base="xs:string">
                        <xs:maxLength value="64"/>
                      </xs:restriction>
                    </xs:simpleType>
                  </xs:element>
                  <xs:element name="CollectionId">
                    <xs:simpleType>
                      <xs:restriction base="xs:string">
                        <xs:maxLength value="64"/>
                      </xs:restriction>
                    </xs:simpleType>
                  </xs:element>
                  <xs:element name="Supported" minOccurs="0">
                    <xs:complexType mixed="true">
                      <xs:sequence minOccurs="0">
                        <xs:choice maxOccurs="unbounded">
                          <xs:group ref="contacts:GhostingProps"/>
                          <xs:group ref="contacts2:GhostingProps"/>
                          <xs:group ref="calendar:GhostingProps"/>
                        </xs:choice>
                      </xs:sequence>
                    </xs:complexType>
                  </xs:element>
                  <xs:element name="DeletesAsMoves" minOccurs="0"/>
                  <xs:element name="GetChanges" minOccurs="0"/>
                  <xs:element name="WindowSize" minOccurs="0">
                    <xs:simpleType>
                      <xs:restriction base="xs:integer">
                        <xs:minInclusive value="0"/>
                      </xs:restriction>
                    </xs:simpleType>
                  </xs:element>
                  <xs:element name="ConversationMode" minOccurs="0"/>

```

```

<xs:element name="Options" minOccurs="0">
  <xs:complexType>
    <xs:choice maxOccurs="unbounded">
      <xs:element name="FilterType" minOccurs="0">
        <xs:simpleType>
          <xs:restriction base="xs:unsignedByte">
            <xs:minInclusive value="0"/>
            <xs:maxInclusive value="8"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element name="Class" type="xs:string" minOccurs="0"/>
      <xs:element ref="airsyncbase:BodyPreference" minOccurs="0"
maxOccurs="unbounded"/>
      <xs:element ref="airsyncbase:BodyPartPreference" minOccurs="0"/>
      <xs:element name="Conflict" type="xs:unsignedByte" minOccurs="0"/>
      <xs:element name="MIMESupport" minOccurs="0">
        <xs:simpleType>
          <xs:restriction base="xs:unsignedByte">
            <xs:minInclusive value="0"/>
            <xs:maxInclusive value="2"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element name="MIMETruncation" minOccurs="0">
        <xs:simpleType>
          <xs:restriction base="xs:unsignedByte">
            <xs:minInclusive value="0"/>
            <xs:maxInclusive value="8"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element name="MaxItems" minOccurs="0">
        <xs:simpleType>
          <xs:restriction base="xs:integer">
            <xs:minInclusive value="1"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element ref="rm:RightsManagementSupport" minOccurs="0"/>
    </xs:choice>
  </xs:complexType>
</xs:element>
<xs:element name="Commands" minOccurs="0">
  <xs:complexType>
    <xs:choice maxOccurs="unbounded">
      <xs:element name="Change" minOccurs="0" maxOccurs="unbounded">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="ServerId">
              <xs:simpleType>
                <xs:restriction base="xs:string">
                  <xs:maxLength value="64"/>
                </xs:restriction>
              </xs:simpleType>
            </xs:element>
            <xs:element name="ApplicationData">
              <xs:complexType>
                <xs:sequence>

```

```

<xs:choice maxOccurs="unbounded">
  <!--Email class content start-->
  <xs:element ref="email:Flag"/>
  <xs:element ref="email:Read"/>
  <xs:element ref="email:Categories"/>
  <!--Email class content end-->
  <xs:element ref="calendar:OrganizerName"/>
  <xs:element ref="calendar:OrganizerEmail"/>
  <xs:element ref="calendar:Exceptions"/>
  <xs:element ref="calendar:Attendees"/>
  <xs:element ref="calendar:DisallowNewTimeProposal"/>
  <xs:element ref="calendar:ResponseRequested"/>
  <xs:element ref="calendar:TimeZone"/>
  <xs:element ref="calendar:AllDayEvent"/>
  <xs:element ref="airsynibase:NativeBodyType"/>
  <xs:element ref="airsynibase:Body"/>
  <xs:element ref="calendar:BusyStatus"/>
  <xs:element ref="calendar:Categories"/>
  <xs:element ref="calendar:DtStamp"/>
  <xs:element ref="calendar:EndTime"/>
  <xs:element ref="calendar:Location"/>
  <xs:element ref="calendar:MeetingStatus"/>
  <xs:element ref="calendar:Reminder"/>
  <xs:element ref="calendar:Sensitivity"/>
  <xs:element ref="calendar:Subject"/>
  <xs:element ref="calendar:StartTime"/>
  <xs:element ref="calendar:UID"/>
  <xs:element ref="calendar:Recurrence"/>
  <xs:element ref="contacts:Anniversary"/>
  <xs:element ref="contacts:AssistantName"/>
  <xs:element ref="contacts:AssistantPhoneNumber"/>
  <xs:element ref="contacts:AssistnamePhoneNumber"/>
  <xs:element ref="contacts:Birthday"/>
  <xs:element ref="contacts:Business2PhoneNumber"/>
  <xs:element ref="contacts:BusinessAddressCity"/>
  <xs:element ref="contacts:BusinessAddressCountry"/>
  <xs:element
ref="contacts:BusinessAddressPostalCode"/>
  <xs:element ref="contacts:BusinessAddressState"/>
  <xs:element ref="contacts:BusinessAddressStreet"/>
  <xs:element ref="contacts:BusinessFaxNumber"/>
  <xs:element ref="contacts:BusinessPhoneNumber"/>
  <xs:element ref="contacts:CarPhoneNumber"/>
  <xs:element ref="contacts:Categories"/>
  <xs:element ref="contacts:Children"/>
  <xs:element ref="contacts:CompanyName"/>
  <xs:element ref="contacts:Department"/>
  <xs:element ref="contacts:Email1Address"/>
  <xs:element ref="contacts:Email2Address"/>
  <xs:element ref="contacts:Email3Address"/>
  <xs:element ref="contacts:FileAs"/>
  <xs:element ref="contacts:FirstName"/>
  <xs:element ref="contacts:MiddleName"/>
  <xs:element ref="contacts:Home2PhoneNumber"/>
  <xs:element ref="contacts:HomeAddressCity"/>
  <xs:element ref="contacts:HomeAddressCountry"/>
  <xs:element ref="contacts:HomeAddressPostalCode"/>
  <xs:element ref="contacts:HomeAddressState"/>
  <xs:element ref="contacts:HomeAddressStreet"/>

```

```

<xs:element ref="contacts:HomeFaxNumber"/>
<xs:element ref="contacts:HomePhoneNumber"/>
<xs:element ref="contacts:JobTitle"/>
<xs:element ref="contacts:LastName"/>
<xs:element ref="contacts:MobilePhoneNumber"/>
<xs:element ref="contacts:OfficeLocation"/>
<xs:element ref="contacts:OtherAddressCity"/>
<xs:element ref="contacts:OtherAddressCountry"/>
<xs:element ref="contacts:OtherAddressPostalCode"/>
<xs:element ref="contacts:OtherAddressState"/>
<xs:element ref="contacts:OtherAddressStreet"/>
<xs:element ref="contacts:PagerNumber"/>
<xs:element ref="contacts:RadioPhoneNumber"/>
<xs:element ref="contacts:Spouse"/>
<xs:element ref="contacts:Suffix"/>
<xs:element ref="contacts:Title"/>
<xs:element ref="contacts:WebPage"/>
<xs:element ref="contacts:YomiCompanyName"/>
<xs:element ref="contacts:YomiFirstName"/>
<xs:element ref="contacts:Picture"/>
<xs:element ref="contacts2:CustomerId"/>
<xs:element ref="contacts2:GovernmentId"/>
<xs:element ref="contacts2:IMAddress"/>
<xs:element ref="contacts2:IMAddress2"/>
<xs:element ref="contacts2:IMAddress3"/>
<xs:element ref="contacts2:ManagerName"/>
<xs:element ref="contacts2:CompanyMainPhone"/>
<xs:element ref="contacts2:AccountName"/>
<xs:element ref="contacts2:NickName"/>
<xs:element ref="contacts2:MMS"/>
<xs:element ref="contacts:YomiLastName"/>
<xs:element ref="tasks:Complete"/>
<xs:element ref="tasks:Subject"/>
<xs:element ref="tasks:Categories"/>
<xs:element ref="tasks:DateCompleted"/>
<xs:element ref="tasks:DueDate"/>
<xs:element ref="tasks:UtcDueDate"/>
<xs:element ref="tasks:Importance"/>
<xs:element ref="tasks:Recurrence"/>
<xs:element ref="tasks:ReminderSet"/>
<xs:element ref="tasks:ReminderTime"/>
<xs:element ref="tasks:Sensitivity"/>
<xs:element ref="tasks:StartDate"/>
<xs:element ref="tasks:UtcStartDate"/>
<xs:element ref="notes:Subject"/>
<xs:element ref="notes:MessageClass"/>
<xs:element ref="notes:LastModifiedDate"/>
<xs:element ref="notes:Categories"/>
</xs:choice>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="Delete" minOccurs="0" maxOccurs="unbounded">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="ServerId">

```

```

        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:maxLength value="64"/>
            </xs:restriction>
        </xs:simpleType>
    </xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="Add" minOccurs="0" maxOccurs="unbounded">
    <xs:complexType>
        <xs:sequence>
            <xs:sequence>
                <xs:element name="Class" type="xs:string" minOccurs="0"/>
                <xs:element name="ClientId">
                    <xs:simpleType>
                        <xs:restriction base="xs:string">
                            <xs:maxLength value="64"/>
                        </xs:restriction>
                    </xs:simpleType>
                </xs:element>
                <xs:element name="ApplicationData">
                    <xs:complexType>
                        <xs:sequence>
                            <xs:choice maxOccurs="unbounded">
                                <xs:element ref="calendar:OrganizerName"/>
                                <xs:element ref="calendar:OrganizerEmail"/>
                                <xs:element ref="calendar:Exceptions"/>
                                <xs:element ref="calendar:Attendees"/>
                                <xs:element ref="calendar:DisallowNewTimeProposal"/>
                                <xs:element ref="calendar:ResponseRequested"/>
                                <xs:element ref="calendar:TimeZone"/>
                                <xs:element ref="calendar:AllDayEvent"/>
                                <xs:element ref="airsynibase:NativeBodyType"/>
                                <xs:element ref="airsynibase:Body"/>
                                <xs:element ref="calendar:BusyStatus"/>
                                <xs:element ref="calendar:Categories"/>
                                <xs:element ref="calendar:DtStamp"/>
                                <xs:element ref="calendar:EndTime"/>
                                <xs:element ref="calendar:Location"/>
                                <xs:element ref="calendar:MeetingStatus"/>
                                <xs:element ref="calendar:Reminder"/>
                                <xs:element ref="calendar:Sensitivity"/>
                                <xs:element ref="calendar:Subject"/>
                                <xs:element ref="calendar:StartTime"/>
                                <xs:element ref="calendar:UID"/>
                                <xs:element ref="calendar:Recurrence"/>
                                <xs:element ref="contacts:Anniversary"/>
                                <xs:element ref="contacts:AssistantName"/>
                                <xs:element ref="contacts:AssistantPhoneNumber"/>
                                <xs:element ref="contacts:AssistnamePhoneNumber"/>
                                <xs:element ref="contacts:Birthday"/>
                                <xs:element ref="contacts:Business2PhoneNumber"/>
                                <xs:element ref="contacts:BusinessAddressCity"/>
                                <xs:element ref="contacts:BusinessAddressCountry"/>
                                <xs:element
ref="contacts:BusinessAddressPostalCode"/>
                                <xs:element ref="contacts:BusinessAddressState"/>
                                <xs:element ref="contacts:BusinessAddressStreet"/>
                                <xs:element ref="contacts:BusinessFaxNumber"/>

```

```

<xs:element ref="contacts:BusinessPhoneNumber"/>
<xs:element ref="contacts:CarPhoneNumber"/>
<xs:element ref="contacts:Categories"/>
<xs:element ref="contacts:Children"/>
<xs:element ref="contacts:CompanyName"/>
<xs:element ref="contacts:Department"/>
<xs:element ref="contacts:Email1Address"/>
<xs:element ref="contacts:Email2Address"/>
<xs:element ref="contacts:Email3Address"/>
<xs:element ref="contacts:FileAs"/>
<xs:element ref="contacts:FirstName"/>
<xs:element ref="contacts:MiddleName"/>
<xs:element ref="contacts:Home2PhoneNumber"/>
<xs:element ref="contacts:HomeAddressCity"/>
<xs:element ref="contacts:HomeAddressCountry"/>
<xs:element ref="contacts:HomeAddressPostalCode"/>
<xs:element ref="contacts:HomeAddressState"/>
<xs:element ref="contacts:HomeAddressStreet"/>
<xs:element ref="contacts:HomeFaxNumber"/>
<xs:element ref="contacts:HomePhoneNumber"/>
<xs:element ref="contacts:JobTitle"/>
<xs:element ref="contacts:LastName"/>
<xs:element ref="contacts:MobilePhoneNumber"/>
<xs:element ref="contacts:OfficeLocation"/>
<xs:element ref="contacts:OtherAddressCity"/>
<xs:element ref="contacts:OtherAddressCountry"/>
<xs:element ref="contacts:OtherAddressPostalCode"/>
<xs:element ref="contacts:OtherAddressState"/>
<xs:element ref="contacts:OtherAddressStreet"/>
<xs:element ref="contacts:PagerNumber"/>
<xs:element ref="contacts:RadioPhoneNumber"/>
<xs:element ref="contacts:Spouse"/>
<xs:element ref="contacts:Suffix"/>
<xs:element ref="contacts:Title"/>
<xs:element ref="contacts:WebPage"/>
<xs:element ref="contacts:YomiCompanyName"/>
<xs:element ref="contacts:YomiFirstName"/>
<xs:element ref="contacts:YomiLastName"/>
<xs:element ref="contacts:Picture"/>
<xs:element ref="contacts2:CustomerId"/>
<xs:element ref="contacts2:GovernmentId"/>
<xs:element ref="contacts2:IMAddress"/>
<xs:element ref="contacts2:IMAddress2"/>
<xs:element ref="contacts2:IMAddress3"/>
<xs:element ref="contacts2:ManagerName"/>
<xs:element ref="contacts2:CompanyMainPhone"/>
<xs:element ref="contacts2:AccountName"/>
<xs:element ref="contacts2:NickName"/>
<xs:element ref="contacts2:MMS"/>
<xs:element ref="tasks:Complete"/>
<xs:element ref="tasks:Subject"/>
<xs:element ref="tasks:Categories"/>
<xs:element ref="tasks:DateCompleted"/>
<xs:element ref="tasks:DueDate"/>
<xs:element ref="tasks:UtcDueDate"/>
<xs:element ref="tasks:Importance"/>
<xs:element ref="tasks:Recurrence"/>
<xs:element ref="tasks:ReminderSet"/>
<xs:element ref="tasks:ReminderTime"/>

```

```

        <xs:element ref="tasks:Sensitivity"/>
        <xs:element ref="tasks:StartDate"/>
        <xs:element ref="tasks:UtcStartDate"/>
        <xs:element ref="notes:Subject"/>
        <xs:element ref="notes:MessageClass"/>
        <xs:element ref="notes:LastModifiedDate"/>
        <xs:element ref="notes:Categories"/>
        <xs:element ref="email:To"/>
        <xs:element ref="email:From"/>
        <xs:element ref="email:DateReceived"/>
        <xs:element ref="email:InternetCPIID"/>
        <xs:element ref="email:Importance"/>
        <xs:element ref="email:Flag"/>
        <xs:element ref="email:Read"/>
    </xs:choice>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="Fetch" minOccurs="0" maxOccurs="unbounded">
    <xs:complexType>
        <xs:sequence>
            <xs:element name="ServerId">
                <xs:simpleType>
                    <xs:restriction base="xs:string">
                        <xs:maxLength value="64"/>
                    </xs:restriction>
                </xs:simpleType>
            </xs:element>
        </xs:sequence>
    </xs:complexType>
</xs:element>
</xs:choice>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="Wait" minOccurs="0">
    <xs:simpleType>
        <xs:restriction base="xs:integer">
            <xs:minInclusive value="1"/>
            <xs:maxInclusive value="59"/>
        </xs:restriction>
    </xs:simpleType>
</xs:element>
<xs:element name="HeartbeatInterval" minOccurs="0">
    <xs:simpleType>
        <xs:restriction base="xs:integer">
            <xs:minInclusive value="1"/>
            <xs:maxInclusive value="3540"/>
        </xs:restriction>
    </xs:simpleType>
</xs:element>

```

```

    <xs:element name="WindowSize" minOccurs="0">
      <xs:simpleType>
        <xs:restriction base="xs:integer">
          <xs:minInclusive value="0"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element name="Partial" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
</xs:element>
</xs:schema>

```

The **Sync** command request is further specified in [\[MS-ASCMD\]](#) section 2.2.2.19.1.

3.1.6 Timer Events

None.

3.1.7 Other Local Events

None.

3.2 Server Details

3.2.1 Abstract Data Model

This section describes a conceptual model of possible data organization that an implementation maintains to participate in this protocol. The described organization is provided to facilitate the explanation of how the protocol behaves. This document does not mandate that implementations adhere to this model as long as their external behavior is consistent with that described in this document.

E-mail class: A set of elements that specifies an e-mail message and adheres to the schema definition specified in section [2.2](#). E-mail class data is included in command responses sent to the client when e-mail messages have been retrieved, searched, or synchronized. For more details about processing command responses, see section [3.2.5](#).

Command response: A WBXML formatted message that adheres to the command schemas specified in [\[MS-ASCMD\]](#). The server can return zero or more E-mail class blocks in its command response, depending on how many e-mail items match the criteria specified in the client command request. One E-mail class XML block is returned by the server for every e-mail that matches the criteria specified in the client command request.

3.2.2 Timers

None.

3.2.3 Initialization

None.

3.2.4 Higher-Layer Triggered Events

3.2.4.1 Synchronize E-mail Between Client and Server

Synchronization of E-mail class data is initiated by the client, as specified in section [3.1.4.1](#). The server responds with a **Sync** command response, as specified in [3.2.5.3](#) and [\[MS-ASCMD\]](#) section 2.2.2.19.2.

3.2.4.2 Search E-mail

Searching E-mail class data is initiated by the client, as specified in section [3.1.4.3](#). The server responds with a **Search** command response, as specified in section [3.2.5.2](#) and [\[MS-ASCMD\]](#) section 2.2.2.14.2.

3.2.4.3 Retrieve Individual E-mail

Retrieving E-mail data is initiated by the client, as specified in section [3.1.4.4](#). The server responds with an **ItemOperations** command response, as specified in section [3.2.5.1](#) and [\[MS-ASCMD\]](#) section 2.2.2.8.3.

3.2.4.4 Change Tracking Semantics for Flagging Properties

The <Flag> elements are tracked as a block. A server change to any <Flag> child element on the item **MUST** result in the whole <Flag> block being sent to the client in the <Change> element of the **Sync** command.

Implicit deletes are assumed when the change is applied based on the properties. An implicit delete means that if a tag is not found in the <Flag> container, then the property is deleted.

3.2.4.5 Send Changes to the Client

A server can partition e-mail changes into one or more of the following categories:

- Changes to the <Read> flag
- Changes to <Flag> elements
- Changes to other e-mail elements, such as <Subject>
- Changes to non-protocol properties

The server **SHOULD** send just the <Read> flag or <Flag> elements if that is all that changed. The server **MUST** send down the entire E-mail item if any elements other than the <Read> flag or <Flag> elements changed. The server **SHOULD** send nothing to the client if the non-protocol properties changed.

The following matrix specifies what the server **MUST** send to the client based on which of the previous categories characterize the change.

Read Flag	Flag Elements	Other ActiveSync Protocol Properties	Non-ActiveSync Protocol Properties	Action
N	N	N	N	Send nothing to client
N	N	N	Y	Send nothing to client

Read Flag	Flag Elements	Other ActiveSync Protocol Properties	Non-ActiveSync Protocol Properties	Action
N	N	Y	N	Send full item <Change> to client
N	N	Y	Y	Send full item <Change> to client
N	Y	N	N	Send <Flag> block only
N	Y	N	Y	Send <Flag> block only
N	Y	Y	N	Send full item <Change> to client
N	Y	Y	Y	Send full item <Change> to client
Y	N	N	N	Send <Read> flag only
Y	N	N	Y	Send <Read> flag only
Y	N	Y	N	Send full item <Change> to client
Y	N	Y	Y	Send full item <Change> to client
Y	Y	N	N	Send <Read> flag and <Flag> block
Y	Y	N	Y	Send <Read> flag and <Flag> block
Y	Y	Y	N	Send full item <Change> to client

3.2.5 Message Processing Events and Sequencing Rules

The following sections define how various elements of the E-mail class are used in the context of specific commands. For more details about the commands themselves, see [\[MS-ASCMD\]](#).

3.2.5.1 ItemOperations Command Response

Any of the elements in the E-mail class can be included in an **ItemOperations** command response. If a <Schema> element was included in the command request, then the elements returned MUST be restricted to the elements included in the command request's <Schema> element.

E-mail class elements MUST be returned as children of the <Properties> element, as shown in the following **ItemOperations** command response schema.

Note: The Email class content in the schema is denoted with the `<!--Email class content start-->` and `<!--Email class content end-->` comments.

```

<?xml version="1.0"?>
<xs:schema xmlns:tns="ItemOperations:" xmlns:airsync="AirSync:"
xmlns:airsyncbase="AirSyncBase:" xmlns:email="Email:" xmlns:email2="Email2:"
xmlns:rm="RightsManagement:" xmlns:documentlibrary="DocumentLibrary:"
xmlns:xs="http://www.w3.org/2001/XMLSchema" targetNamespace="ItemOperations:"
elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:import namespace="DocumentLibrary:" schemaLocation="DocumentLibrary.xsd"/>
  <xs:import namespace="AirSync:" schemaLocation="AirSync.xsd"/>
  <xs:import namespace="AirSyncBase:" schemaLocation="AirSyncBase.xsd"/>
  <xs:import namespace="Email:" schemaLocation="Email.xsd"/>
  <xs:import namespace="Email2:" schemaLocation="Email2.xsd"/>
  <xs:import namespace="RightsManagement:" schemaLocation="RightsManagement.xsd"/>
  <xs:element name="ItemOperations">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="Status" type="xs:integer"/>
        <xs:element name="Response" minOccurs="0">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="Move" minOccurs="0" maxOccurs="unbounded">
                <xs:complexType>
                  <xs:all>
                    <xs:element name="Status" type="xs:integer"/>
                  </xs:all>
                </xs:complexType>
              </xs:element>
              <xs:element name="EmptyFolderContents" minOccurs="0" maxOccurs="unbounded">
                <xs:complexType>
                  <xs:sequence>
                    <xs:element name="Status" type="xs:integer"/>
                    <xs:element ref="airsync:CollectionId"/>
                  </xs:sequence>
                </xs:complexType>
              </xs:element>
              <xs:element name="Fetch" minOccurs="0" maxOccurs="unbounded">
                <xs:complexType>
                  <xs:sequence>
                    <xs:element name="Status" type="xs:integer"/>
                    <xs:element ref="airsync:CollectionId"/>
                    <xs:element ref="airsync:ServerId" minOccurs="0"/>
                    <xs:element ref="airsync:Class" minOccurs="0"/>
                    <xs:element ref="documentlibrary:LinkId" minOccurs="0"/>
                    <xs:element name="Properties" minOccurs="0">
                      <xs:complexType>
                        <xs:sequence>
                          <xs:element name="Range" type="xs:string" minOccurs="0"/>
                          <xs:element name="Total" type="xs:integer" minOccurs="0"/>
                          <xs:element name="Data" type="xs:string" minOccurs="0"/>
                          <xs:element name="Part" type="xs:integer" minOccurs="0"/>
                          <xs:element name="Version" type="xs:dateTime" minOccurs="0"/>
                          <!--Email class content start-->
                          <xs:element ref="email:To" minOccurs="0"/>
                          <xs:element ref="email:Cc" minOccurs="0"/>
                          <xs:element ref="email:From" minOccurs="0"/>
                          <xs:element ref="email:Subject" minOccurs="0"/>
                          <xs:element ref="email:ReplyTo" minOccurs="0"/>
                          <xs:element ref="email:DateReceived" minOccurs="0"/>
                          <xs:element ref="email:DisplayTo" minOccurs="0"/>
                          <xs:element ref="email:ThreadTopic" minOccurs="0"/>

```

```

        <xs:element ref="email:Importance" minOccurs="0"/>
        <xs:element ref="email:Read" minOccurs="0"/>
        <xs:element ref="airsyncbase:Attachments" minOccurs="0"/>
        <xs:element ref="airsyncbase:Body" minOccurs="0"/>
        <xs:element ref="email:MessageClass" minOccurs="0"/>
        <xs:element ref="email:MeetingRequest" minOccurs="0"/>
        <xs:element ref="email:InternetCPID"/>
        <xs:element ref="email:Flag" minOccurs="0"/>
        <xs:element ref="email:ContentClass" minOccurs="0"/>
        <xs:element ref="airsyncbase:NativeBodyType" minOccurs="0"/>
        <xs:element ref="email2:UmCallerID" minOccurs="0"/>
        <xs:element ref="email2:UmUserNotes" minOccurs="0"/>
        <xs:element ref="email2:UmAttOrder" minOccurs="0"/>
        <xs:element ref="email2:UmAttDuration" minOccurs="0"/>
        <xs:element ref="email2:ConversationId"/>
        <xs:element ref="email2:ConversationIndex"/>
        <xs:element ref="email2:LastVerbExecuted" minOccurs="0"/>
        <xs:element ref="email2:LastVerbExecutionTime" minOccurs="0"/>
        <xs:element ref="email2:ReceivedAsBcc" minOccurs="0"/>
        <xs:element ref="email2:Sender" minOccurs="0"/>
        <xs:element ref="email:Categories" minOccurs="0"/>
        <xs:element ref="airsyncbase:BodyPart" minOccurs="0"/>
        <xs:element ref="email2:AccountId" minOccurs="0"/>
        <xs:element ref="rm:RightsManagementLicense" minOccurs="0"/>
        <!--Email class content end-->
    </xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:schema>

```

The **ItemOperations** command response is further specified in [\[MS-ASCMD\]](#) section 2.2.2.8.3.

3.2.5.2 Search Command Response

Any of the E-mail class elements can be included in a **Search** command response as children of the <Properties> element, as shown in the following **Search** command response schema.

Note: The Email class content in the schema is denoted with the <!--Email class content start--> and <!--Email class content end--> comments.

```

<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns="Search:" xmlns:airsyncbase="AirSyncBase:" xmlns:airsync="AirSync:"
xmlns:email="Email:" xmlns:email2="Email2:" xmlns:rm="RightsManagement:"
xmlns:xs="http://www.w3.org/2001/XMLSchema" targetNamespace="Search:"
elementFormDefault="unqualified" attributeFormDefault="unqualified">
    <xs:import namespace="AirSync:" schemaLocation="AirSync.xsd"/>
    <xs:import namespace="AirSyncBase:" schemaLocation="AirSyncBase.xsd"/>
    <xs:import namespace="Email:" schemaLocation="Email.xsd"/>

```

```

<xs:import namespace="Email2:" schemaLocation="Email2.xsd"/>
<xs:import namespace="RightsManagement:" schemaLocation="RightsManagement.xsd"/>
<xs:element name="Search">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="Status" minOccurs="0"/>
      <xs:element name="Response">
        <xs:complexType>
          <xs:all>
            <xs:element name="Store">
              <xs:complexType>
                <xs:sequence>
                  <xs:element name="Status"/>
                  <xs:element name="Result" maxOccurs="unbounded">
                    <xs:complexType>
                      <xs:sequence>
                        <xs:element ref="airsync:Class"/>
                        <xs:element name="LongId" minOccurs="0">
                          <xs:simpleType>
                            <xs:restriction base="xs:string">
                              <xs:minLength value="0"/>
                              <xs:maxLength value="265"/>
                            </xs:restriction>
                          </xs:simpleType>
                        </xs:element>
                      </xs:sequence>
                    </xs:complexType>
                  </xs:element>
                  <xs:element ref="airsync:CollectionId"/>
                  <xs:element name="Properties">
                    <xs:complexType>
                      <xs:all>
                        <!--Email class content start-->
                        <xs:element ref="email:To" minOccurs="0"/>
                        <xs:element ref="email:Cc" minOccurs="0"/>
                        <xs:element ref="email:From" minOccurs="0"/>
                        <xs:element ref="email:Subject" minOccurs="0"/>
                        <xs:element ref="email:ReplyTo" minOccurs="0"/>
                        <xs:element ref="email:DateReceived" minOccurs="0"/>
                        <xs:element ref="email:DisplayTo" minOccurs="0"/>
                        <xs:element ref="email:ThreadTopic" minOccurs="0"/>
                        <xs:element ref="email:Importance" minOccurs="0"/>
                        <xs:element ref="email:Read" minOccurs="0"/>
                        <xs:element ref="airsyncbase:Attachments" minOccurs="0"/>
                        <xs:element ref="airsyncbase:Body" minOccurs="0"/>
                        <xs:element ref="email:MessageClass" minOccurs="0"/>
                        <xs:element ref="email:MeetingRequest" minOccurs="0"/>
                        <xs:element ref="email:InternetCPID"/>
                        <xs:element ref="email:Flag" minOccurs="0"/>
                        <xs:element ref="email:ContentClass" minOccurs="0"/>
                        <xs:element ref="airsyncbase:NativeBodyType" minOccurs="0"/>
                        <xs:element ref="email2:UmCallerID" minOccurs="0"/>
                        <xs:element ref="email2:UmUserNotes" minOccurs="0"/>
                        <xs:element ref="email2:UmAttOrder" minOccurs="0"/>
                        <xs:element ref="email2:UmAttDuration" minOccurs="0"/>
                        <xs:element ref="email2:ConversationId"/>
                        <xs:element ref="email2:ConversationIndex"/>
                        <xs:element ref="email2:LastVerbExecuted" minOccurs="0"/>
                        <xs:element ref="email2:LastVerbExecutionTime"
minOccurs="0"/>
                        <xs:element ref="email2:ReceivedAsBcc" minOccurs="0"/>
                        <xs:element ref="email2:Sender" minOccurs="0"/>

```

```

        <xs:element ref="email:Categories" minOccurs="0"/>
        <xs:element ref="airsyncbase:BodyPart" minOccurs="0"/>
        <xs:element ref="email2:AccountId" minOccurs="0"/>
        <xs:element ref="rm:RightsManagementLicense" minOccurs="0"/>
        <!--Email class content end-->
    </xs:all>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="Range" type="xs:string" minOccurs="0"/>
<xs:element name="Total" type="xs:integer" minOccurs="0"/>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:all>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:schema>

```

The **Search** command response is further specified in [\[MS-ASCMD\]](#) section 2.2.2.14.2.

3.2.5.3 Sync Command Response

Any of the E-mail class elements can be included in a **Sync** command response.

E-mail class elements **MUST** be returned as children of the <ApplicationData> element, as shown in the following **Sync** command response schema.

Note: The Email class content in the schema is denoted with the <!--Email class content start--> and <!--Email class content end--> comments.

```

<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:tns="AirSync:" xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns:email="Email:" xmlns:email2="Email2:" xmlns:airsyncbase="AirSyncBase:"
  xmlns:rm="RightsManagement:" targetNamespace="AirSync:" elementFormDefault="qualified"
  attributeFormDefault="unqualified">
  <xs:import namespace="Email:" schemaLocation="Email.xsd"/>
  <xs:import namespace="Email2:" schemaLocation="Email2.xsd"/>
  <xs:import namespace="AirSyncBase:" schemaLocation="AirSyncBase.xsd"/>
  <xs:import namespace="RightsManagement:" schemaLocation="RightsManagement.xsd"/>
  <xs:complexType name="EmptyTag"/>
  <xs:element name="Sync">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="Status" type="xs:unsignedByte"/>
        <xs:choice>
          <xs:element name="Limit" type="xs:integer" minOccurs="0"/>
          <xs:element name="Collections" minOccurs="0">
            <xs:complexType>
              <xs:sequence>
                <xs:element name="Collection" minOccurs="0" maxOccurs="unbounded">
                  <xs:complexType>

```

```

<xs:sequence>
  <xs:choice maxOccurs="unbounded">
    <xs:element name="SyncKey">
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:maxLength value="64"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element name="CollectionId">
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:maxLength value="64"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element name="Status" type="xs:unsignedByte"/>
    <xs:element name="Commands" minOccurs="0">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Delete" minOccurs="0" maxOccurs="unbounded">
            <xs:complexType>
              <xs:sequence>
                <xs:element name="Class" type="xs:string" minOccurs="0"/>
                <xs:element name="ServerId">
                  <xs:simpleType>
                    <xs:restriction base="xs:string">
                      <xs:maxLength value="64"/>
                    </xs:restriction>
                  </xs:simpleType>
                </xs:element>
              </xs:sequence>
            </xs:complexType>
          </xs:element>
          <xs:element name="SoftDelete" minOccurs="0"
maxOccurs="unbounded">
            <xs:complexType>
              <xs:sequence>
                <xs:element name="ServerId">
                  <xs:simpleType>
                    <xs:restriction base="xs:string">
                      <xs:maxLength value="64"/>
                    </xs:restriction>
                  </xs:simpleType>
                </xs:element>
              </xs:sequence>
            </xs:complexType>
          </xs:element>
          <xs:element name="Change" minOccurs="0" maxOccurs="unbounded">
            <xs:complexType>
              <xs:sequence>
                <xs:element name="Class" type="xs:string" minOccurs="0"/>
                <xs:element name="ServerId">
                  <xs:simpleType>
                    <xs:restriction base="xs:string">
                      <xs:maxLength value="64"/>
                    </xs:restriction>
                  </xs:simpleType>
                </xs:element>
              </xs:sequence>
            </xs:complexType>
          </xs:element>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:choice>

```

```

<xs:element name="ApplicationData">
  <xs:complexType>
    <xs:sequence>
      <!--Email class content start-->
      <xs:element ref="email:Read" minOccurs="0"/>
      <xs:element ref="email:Flag" minOccurs="0"/>
      <xs:element ref="email:Categories" minOccurs="0"/>
      <!--Email class content end-->
    </xs:sequence>
  </xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="Add" minOccurs="0" maxOccurs="unbounded">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="ServerId">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:maxLength value="64"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element name="ApplicationData">
        <xs:complexType>
          <xs:sequence>
            <!--Email class content start-->
            <xs:element ref="email:To" minOccurs="0"/>
            <xs:element ref="email:Cc" minOccurs="0"/>
            <xs:element ref="email:From" minOccurs="0"/>
            <xs:element ref="email:Subject" minOccurs="0"/>
            <xs:element ref="email:ReplyTo" minOccurs="0"/>
            <xs:element ref="email:DateReceived"
minOccurs="0"/>
            <xs:element ref="email:DisplayTo" minOccurs="0"/>
            <xs:element ref="email:ThreadTopic" minOccurs="0"/>
            <xs:element ref="email:Importance" minOccurs="0"/>
            <xs:element ref="email:Read" minOccurs="0"/>
            <xs:element ref="airsyncbase:Attachments"
minOccurs="0"/>
            <xs:element ref="airsyncbase:Body" minOccurs="0"/>
            <xs:element ref="email:MessageClass"
minOccurs="0"/>
            <xs:element ref="email:MeetingRequest"
minOccurs="0"/>
            <xs:element ref="email:InternetCPID"/>
            <xs:element ref="email:Flag" minOccurs="0"/>
            <xs:element ref="email:ContentClass"
minOccurs="0"/>
            <xs:element ref="airsyncbase:NativeBodyType"
minOccurs="0"/>
            <xs:element ref="email2:UmCallerID" minOccurs="0"/>
            <xs:element ref="email2:UmUserNotes"
minOccurs="0"/>
            <xs:element ref="email2:UmAttOrder" minOccurs="0"/>
            <xs:element ref="email2:UmAttDuration"
minOccurs="0"/>
            <xs:element ref="email2:ConversationId"/>
            <xs:element ref="email2:ConversationIndex"/>

```



```

minOccurs="0"/>
minOccurs="0"/>
minOccurs="0"/>
minOccurs="0"/>
minOccurs="0"/>
minOccurs="0"/>
<xs:element ref="email2:LastVerbExecuted"
<xs:element ref="email2:LastVerbExecutionTime"
<xs:element ref="email2:ReceivedAsBcc"
<xs:element ref="email2:Sender" minOccurs="0"/>
<xs:element ref="email:Categories" minOccurs="0"/>
<xs:element ref="airsyncbase:BodyPart"
<xs:element ref="email2:AccountId" minOccurs="0"/>
<xs:element ref="rm:RightsManagementLicense"
<!--Email class content end-->
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="Responses" minOccurs="0">
<xs:complexType>
<xs:sequence>
<xs:element name="Change" minOccurs="0" maxOccurs="unbounded">
<xs:complexType>
<xs:sequence>
<xs:element name="Class" type="xs:string" minOccurs="0"/>
<xs:element name="ServerId">
<xs:simpleType>
<xs:restriction base="xs:string">
<xs:maxLength value="64"/>
</xs:restriction>
</xs:simpleType>
</xs:element>
<xs:element name="Status" type="xs:unsignedByte"/>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="Add" minOccurs="0" maxOccurs="unbounded">
<xs:complexType>
<xs:sequence>
<xs:element name="Class" type="xs:string" minOccurs="0"/>
<xs:element name="ClientId" type="xs:unsignedByte"/>
<xs:element name="ServerId">
<xs:simpleType>
<xs:restriction base="xs:string">
<xs:maxLength value="64"/>
</xs:restriction>
</xs:simpleType>
</xs:element>
<xs:element name="Status" type="xs:unsignedByte"/>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="Fetch">
<xs:complexType>

```

```

<xs:sequence>
  <xs:element name="ServerId">
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:maxLength value="64"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:element>
  <xs:element name="Status" type="xs:unsignedByte"/>
  <xs:element name="ApplicationData">
    <xs:complexType>
      <xs:sequence>
        <!--Email class content start-->
        <xs:element ref="email:To" minOccurs="0"/>
        <xs:element ref="email:Cc" minOccurs="0"/>
        <xs:element ref="email:From" minOccurs="0"/>
        <xs:element ref="email:Subject" minOccurs="0"/>
        <xs:element ref="email:ReplyTo" minOccurs="0"/>
        <xs:element ref="email:DateReceived"
minOccurs="0"/>
        <xs:element ref="email:DisplayTo" minOccurs="0"/>
        <xs:element ref="email:ThreadTopic" minOccurs="0"/>
        <xs:element ref="email:Importance" minOccurs="0"/>
        <xs:element ref="email:Read" minOccurs="0"/>
        <xs:element ref="airsyncbase:Attachments"
minOccurs="0"/>
        <xs:element ref="airsyncbase:Body" minOccurs="0"/>
        <xs:element ref="email:MessageClass"
minOccurs="0"/>
        <xs:element ref="email:MeetingRequest"
minOccurs="0"/>
        <xs:element ref="email:InternetCPID"/>
        <xs:element ref="email:Flag" minOccurs="0"/>
        <xs:element ref="email:ContentClass"
minOccurs="0"/>
        <xs:element ref="airsyncbase:NativeBodyType"
minOccurs="0"/>
        <xs:element ref="email2:UmCallerID" minOccurs="0"/>
        <xs:element ref="email2:UmUserNotes"
minOccurs="0"/>
        <xs:element ref="email2:UmAttOrder" minOccurs="0"/>
        <xs:element ref="email2:UmAttDuration"
minOccurs="0"/>
        <xs:element ref="email2:ConversationId"/>
        <xs:element ref="email2:ConversationIndex"/>
        <xs:element ref="email2:LastVerbExecuted"
minOccurs="0"/>
        <xs:element ref="email2:LastVerbExecutionTime"
minOccurs="0"/>
        <xs:element ref="email2:ReceivedAsBcc"
minOccurs="0"/>
        <xs:element ref="email2:Sender" minOccurs="0"/>
        <xs:element ref="email:Categories" minOccurs="0"/>
        <xs:element ref="airsyncbase:BodyPart"
minOccurs="0"/>
        <xs:element ref="email2:AccountId" minOccurs="0"/>
        <xs:element ref="rm:RightsManagementLicense"
minOccurs="0"/>
        <!--Email class content end-->
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:sequence>

```

```

        </xs:complexType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="MoreAvailable" type="tns:EmptyTag" minOccurs="0"/>
</xs:choice>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:choice>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:schema>

```

The **Sync** command response is further specified in [\[MS-ASCMD\]](#) section 2.2.2.19.2.

3.2.6 Timer Events

None.

3.2.7 Other Local Events

None.

4 Protocol Examples

The examples in this section use decoded values of the **Uniform Resource Identifier (URI)** query parameters and the message body for clarity. The URI query parameter is **base64-encoded** and the body is WBXML-encoded when sent across the wire. For more details about the base64 encoding used in the URI query parameter, see [\[MS-ASHTTP\]](#) section 2.2.1.1.1. For more details about WBXML encoding, see [\[MS-ASWBXML\]](#).

4.1 Synchronizing E-Mail

4.1.1 Example Sync Request for Inbox with Metadata

The following example **Sync** command request synchronizes all metadata in the Inbox, as specified by the <CollectionId> element. This request does not specify that the response include the body content, only the e-mail metadata will be included in the response.

```
<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns="AirSync:">
  <Collections>
    <Collection>
      <SyncKey>927479200</SyncKey>
      <CollectionId>5</CollectionId>
      <DeletesAsMoves>1</DeletesAsMoves>
      <GetChanges>1</GetChanges>
      <WindowSize>512</WindowSize>
    </Collection>
  </Collections>
</Sync>
```

The response to this command is in section [4.1.2](#).

4.1.2 Example Sync Response for Inbox with Metadata

The following example shows the response to the **Sync** command request in section [4.1.1](#). In the response, the server includes the metadata for one e-mail item. The estimated size and body type is included in the response, but the body of the message itself is not included.

```
<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns:email="Email:" xmlns:airsyncbase="AirSyncBase:" xmlns:email2="Email2:"
xmlns="AirSync:">
  <Collections>
    <Collection>
      <SyncKey>927479210</SyncKey>
      <CollectionId>5</CollectionId>
      <Status>1</Status>
      <Commands>
        <Add>
          <ServerId>5:1</ServerId>
          <ApplicationData>
            <email:To>"Device User" &lt;deviceuser@example.com&gt;</email:To>
            <email:From>"Device User 2" &lt;deviceuser2@example.com&gt;</email:From>
            <email:Subject>New mail message</email:Subject>
            <email:DateReceived>2009-07-29T19:25:37.817Z</email:DateReceived>
            <email:DisplayTo>Device User</email:DisplayTo>
            <email:ThreadTopic>New mail message</email:ThreadTopic>
```

```

<email:Importance>1</email:Importance>
<email:Read>0</email:Read>
<airsyncbase:Body>
  <airsyncbase:Type>2</airsyncbase:Type>
  <airsyncbase:EstimatedDataSize>116575</airsyncbase:EstimatedDataSize>
  <airsyncbase:Truncated>1</airsyncbase:Truncated>
</airsyncbase:Body>
<email:MessageClass>IPM.Note</email:MessageClass>
<email:InternetCPID>1252</email:InternetCPID>
<email:Flag />
<email:ContentClass>urn:content-classes:message</email:ContentClass>
<airsyncbase:NativeBodyType>2</airsyncbase:NativeBodyType>
<email2:ConversationId>FF68022058BD485996BE15F6F6D99320</email2:ConversationId>
<email2:ConversationIndex>CA2CFA8A23</email2:ConversationIndex>
<email:Categories />
</ApplicationData>
</Add>
</Commands>
</Collection>
</Collections>
</Sync>

```

4.1.3 Example Sync Request for Inbox with Body Preferences

The following example **Sync** command request includes the `<airsyncbase:BodyPreference>` option, which specifies that the client wants **Hypertext Markup Language (HTML)** mail (Type 2) with the bodies truncated to 5,120 bytes (5 KB). Request messages can include multiple `<airsyncbase:BodyPreference>` elements to specify different `<airsyncbase:TruncationSize>` values for each `<Type>` value. For more information about the `<airsyncbase:BodyPreference>`, `<airsyncbase:TruncationSize>`, or `<airsyncbase:Type>` elements, see [\[MS-ASAIRS\]](#) section 2.2.

```

<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns:AirSyncBase="airsyncbase:" xmlns="AirSync:">
  <Collections>
    <Collection>
      <SyncKey>1534587728</SyncKey>
      <CollectionId>5</CollectionId>
      <DeletesAsMoves>1</DeletesAsMoves>
      <GetChanges>1</GetChanges>
      <WindowSize>512</WindowSize>
      <Options>
        <MIMESupport>0</MIMESupport>
        <airsyncbase:BodyPreference>
          <airsyncbase:Type>2</airsyncbase:Type>
          <airsyncbase:TruncationSize>5120</airsyncbase:TruncationSize>
        </airsyncbase:BodyPreference>
      </Options>
    </Collection>
  </Collections>
</Sync>

```

The response to this message is in section [4.1.4](#).

4.1.4 Example Sync Response Adding One HTML Message

The following example shows the response to the **Sync** command request in section [4.1.3](#). In the response, the server includes the metadata and body for one HTML e-mail message.

```
<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns:email="Email;" xmlns:email2="Email2" xmlns:airsyncbase="AirSyncBase;"
xmlns="AirSync:">
  <Collections>
    <Collection>
      <SyncKey>1174511196</SyncKey>
      <CollectionId>5</CollectionId>
      <Status>1</Status>
      <Commands>
        <Add>
          <ServerId>5:10</ServerId>
          <ApplicationData>
            <email:To>"Device User" &lt;deviceuser@example.com&gt;</email:To>
            <email:From>"Device User2" &lt;deviceuser2@example.com&gt;</email:From>
            <email:Subject>Sample HTML message</email:Subject>
            <email:DateReceived>2009-02-19T01:43:25.266Z</email:DateReceived>
            <email:DisplayTo>Device User</email:DisplayTo>
            <email:ThreadTopic>Sample HTML message</email:ThreadTopic>
            <email:Importance>1</email:Importance>
            <email:Read>0</email:Read>
            <airsyncbase:Body>
              <airsyncbase:Type>2</airsyncbase:Type>
              <airsyncbase:EstimatedDataSize>375</airsyncbase:EstimatedDataSize>
              <airsyncbase:Data>&lt;html dir="ltr"&gt;
                &lt;head&gt;
                  &lt;meta http-equiv="Content-Type" content="text/html; charset=utf-8"&gt;
                  &lt;style id="owaParaStyle"&gt;
                    &lt;!--
                    p
                    {margin-top:0px;
                    margin-bottom:0px}
                    --&gt;
                  &lt;/style&gt;
                  &lt;/head&gt;
                  &lt;body&gt;
                    &lt;div style="font-size:13px; color:#000000; direction:ltr; font-
family:Tahoma"&gt;
                      &lt;div&gt;This is&nbsp;the body of an&nbsp;HTML e-mail
message.&lt;/div&gt;
                      &lt;/div&gt;
                    &lt;/body&gt;
                  &lt;/html&gt;
                </airsyncbase:Data>
              </airsyncbase:Body>
            <email:MessageClass>IPM.Note</email:MessageClass>
            <email:InternetCPID>28591</email:InternetCPID>
            <email:Flag />
            <email:ContentClass>urn:content-classes:message</email:ContentClass>
            <airsyncbase:NativeBodyType>2</airsyncbase:NativeBodyType>
            <email2:ConversationId>FF68022058BD485996BE15F6F6D99320</email2:ConversationId>
            <email2:ConversationIndex>CA2CFA8A23</email2:ConversationIndex>
            <email:Categories />
          </ApplicationData>
        </Add>
      </Commands>
    </Collection>
  </Collections>
</Sync>
```

```

    <Change>
      <ServerId>5:8</ServerId>
      <ApplicationData>
        <email:Read>1</email:Read>
      </ApplicationData>
    </Change>
  </Commands>
</Collection>
</Collections>
</Sync>

```

4.1.5 Example Sync Response Adding an Electronic Voice Mail Attachment

The following example shows the **Sync** command response adding one e-mail item with an electronic voice mail attachment to the client.

```

<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns="AirSync:" xmlns:email="Email:" xmlns:airsyncbase="AirSyncBase:"
xmlns:email2="Email2:">
  <Collections>
    <Collection>
      <SyncKey>1336143213</SyncKey>
      <CollectionId>20</CollectionId>
      <Status>1</Status>
      <Commands>
        <Add>
          <ServerId>20:2</ServerId>
          <ApplicationData>
            <email:To>"Device User" &lt;deviceuser@example.com></email:To>
            <email:From>"7125550123" &lt;7125550123></email:From>
            <email:Subject>Voice Mail from 7125550123 (3 seconds)</email:Subject>
            <email:DateReceived>2007-11-06T23:42:16.829Z</email:DateReceived>
            <email:DisplayTo>Device User</email:DisplayTo>
            <email:ThreadTopic>Voice Mail from 7125550123 (3 seconds)</email:ThreadTopic>
            <email:Importance>1</email:Importance>
            <email:Read>1</email:Read>
            <airsyncbase:Attachments>
              <airsyncbase:Attachment>
                <airsyncbase:DisplayName>7125550123 (3 seconds) Voice
Mail.wma</airsyncbase:DisplayName>
                <airsyncbase:FileReference>20%3a2%3a0</airsyncbase:FileReference>
                <airsyncbase:Method>1</airsyncbase:Method>
                <airsyncbase:EstimatedDataSize>9025</airsyncbase:EstimatedDataSize>
                <email2:UmAttOrder>1</email2:UmAttOrder>
                <email2:UmAttDuration>3</email2:UmAttDuration>
              </airsyncbase:Attachment>
            </airsyncbase:Attachments>
            <airsyncbase:Body>
              <airsyncbase:Type>3</airsyncbase:Type>
              <airsyncbase:EstimatedDataSize>1512</airsyncbase:EstimatedDataSize>
              <airsyncbase:Truncated>1</airsyncbase:Truncated>
            </airsyncbase:Body>
            <email:MessageClass>IPM.Note.Microsoft.Voicemail.UM.CA</email:MessageClass>
            <email:InternetCPID>20127</email:InternetCPID>
            <email:ContentClass>urn:content-classes:message</email:ContentClass>
            <airsyncbase:NativeBodyType>3</airsyncbase:NativeBodyType>
            <email2:CallerID>7125550123</email2:CallerID>
          </Add>
        </Commands>
      </Collection>
    </Collections>
  </Sync>

```

```

        <email2:UserNotes>7125550123</email2:UserNotes>
    </ApplicationData>
</Add>
</Commands>
</Collection>
</Collections>
</Sync>

```

4.1.6 Example Sync Response Adding a Text Attachment

The following example shows the **Sync** command response adding one e-mail item with a text attachment to the client.

```

<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns:email="Email:" xmlns:airsyncbase="AirSyncBase:" xmlns:email2="Email2:"
xmlns="AirSync:">
  <Collections>
    <Collection>
      <SyncKey>334239291</SyncKey>
      <CollectionId>5</CollectionId>
      <Status>1</Status>
      <Commands>
        <Add>
          <ServerId>5:3</ServerId>
          <ApplicationData>
            <email:To>"Device User" &lt;deviceuser@example.com></email:To>
            <email:From>"Device User2" &lt;deviceuser2@example.com></email:From>
            <email:Subject>With Attachment</email:Subject>
            <email:DateReceived>2009-03-04T22:48:41.211Z</email:DateReceived>
            <email:DisplayTo>Device User</email:DisplayTo>
            <email:ThreadTopic>With Attachment</email:ThreadTopic>
            <email:Importance>1</email:Importance>
            <email:Read>0</email:Read>
            <airsyncbase:Attachments>
              <airsyncbase:Attachment>
                <airsyncbase:DisplayName>Test.txt</airsyncbase:DisplayName>
                <airsyncbase:FileReference>5%3a3%3a0</airsyncbase:FileReference>
                <airsyncbase:Method>1</airsyncbase:Method>
                <airsyncbase:EstimatedDataSize>84</airsyncbase:EstimatedDataSize>
              </airsyncbase:Attachment>
            </airsyncbase:Attachments>
            <airsyncbase:Body>
              <airsyncbase:Type>1</airsyncbase:Type>
              <airsyncbase:EstimatedDataSize>33</airsyncbase:EstimatedDataSize>
              <airsyncbase:Truncated>1</airsyncbase:Truncated>
            </airsyncbase:Body>
            <email:MessageClass>IPM.Note</email:MessageClass>
            <email:InternetCPID>20127</email:InternetCPID>
            <email:Flag />
            <email:ContentClass>urn:content-classes:message</email:ContentClass>
            <airsyncbase:NativeBodyType>1</airsyncbase:NativeBodyType>
            <email2:ConversationId>¥gÈtent-cl<email2:ConversationId>
            <email2:ConversationIndex>...<email2:ConversationIndex>
            <email:Categories />
          </ApplicationData>
        </Add>
      </Commands>
    </Collection>
  </Collections>
</Sync>

```



```

    </Collection>
  </Collections>
</Sync>

```

4.1.7 Example Sync Request Deleting One E-mail

The following example shows the **Sync** command request sent by the client to remove the e-mail message described in section [4.1.4](#) from the server.

```

<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns="AirSync:">
  <Collections>
    <Collection>
      <SyncKey>1174511196</SyncKey>
      <CollectionId>5</CollectionId>
      <DeletesAsMoves>1</DeletesAsMoves>
      <GetChanges>1</GetChanges>
      <WindowSize>512</WindowSize>
      <Commands>
        <Delete>
          <ServerId>5:10</ServerId>
        </Delete>
      </Commands>
    </Collection>
  </Collections>
</Sync>

```

4.1.8 Example Success Sync Response

The following example shows the **Sync** command response sent by the server after completing the deletion requested in section [4.1.7](#).

```

<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns="AirSync:">
  <Collections>
    <Collection>
      <SyncKey>721953595</SyncKey>
      <CollectionId>5</CollectionId>
      <Status>1</Status>
    </Collection>
  </Collections>
</Sync>

```

4.1.9 Example Sync Response Adding a Meeting Request

The following example shows the **Sync** command response sent by the server to add a meeting request to the Inbox.

```

<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns:email="Email:" xmlns:airsyncbase="AirSyncBase:" xmlns:email2="Email2:"
xmlns="AirSync:">
  <Collections>
    <Collection>
      <SyncKey>1419832287</SyncKey>

```

```

<CollectionId>5</CollectionId>
<Status>1</Status>
<Commands>
  <Add>
    <ServerId>5:13</ServerId>
    <ApplicationData>
      <email:To>"Device User" &lt;deviceuser@example.com&gt;</email:To>
      <email:From>"Device User2" &lt;deviceuser2@example.com&gt;</email:From>
      <email:Subject>Example Meeting Request</email:Subject>
      <email:DateReceived>2009-02-19T08:35:17.922Z</email:DateReceived>
      <email:DisplayTo>Device User</email:DisplayTo>
      <email:ThreadTopic>Example Meeting Request</email:ThreadTopic>
      <email:Importance>1</email:Importance>
      <email:Read>0</email:Read>
      <airsynbase:Body>
        <airsynbase:Type>3</airsynbase:Type>
        <airsynbase:EstimatedDataSize>437</airsynbase:EstimatedDataSize>
        <airsynbase:Truncated>1</airsynbase:Truncated>
      </airsynbase:Body>
      <email:MessageClass>IPM.Schedule.Meeting.Request</email:MessageClass>
      <email:MeetingRequest>
        <email:AllDayEvent>0</email:AllDayEvent>
        <email:StartTime>2009-02-20T15:30:00.000Z</email:StartTime>
        <email:DtStamp>2009-02-19T08:35:15.786Z</email:DtStamp>
        <email:EndTime>2009-02-20T16:30:00.000Z</email:EndTime>
        <email:InstanceType>0</email:InstanceType>
        <email:Location>Cafe</email:Location>
        <email:Organizer>"Device User2"
&lt;deviceuser2@example.com&gt;</email:Organizer>
        <email:Reminder>900</email:Reminder>
        <email:ResponseRequested>1</email:ResponseRequested>
        <email:Sensitivity>0</email:Sensitivity>
        <email:BusyStatus>2</email:BusyStatus>

<email:TimeZone>aAEAAcGARwBNAFQALQAwADYAOGAwADAACQAgAEMAZQBwAHQAcgBhAGwAIABUAGkAbQBlACAABVA
FMAIAAmACAAQwAAAAaAAAAIAAAAAAAAAAAAAACGARwBNAFQALQAwADYAOGAwADAACQAgAEMAZQBwAHQAcgBhAGwAIA
BUAGkAbQBlACAABVAFMAIAAmACAAQwAAAAaAAAAIAAAAAAAAAAAxP//w==</email:TimeZone>

<email:GlobalObjId>BAAAAIIA4AB0xbcQGOLgCAAAAADYSxf9bJLJAQAAAAAAAAAAAAEAAAAJEHL7SUox5GtgQV1TYDY4
A=</email:GlobalObjId>
    </email:MeetingRequest>
    <email:InternetCPID>28591</email:InternetCPID>
    <email:Flag />
    <email:ContentClass>urn:content-classes:calendarmessage</email:ContentClass>
    <airsynbase:NativeBodyType>3</airsynbase:NativeBodyType>
    <email2:ConversationId>LðØ+*û@à²&#x1A;&#x15;EñMØ±</email2:ConversationId>
    <email2:ConversationIndex>É'ly&#x1F;</email2:ConversationIndex>
    <email:Categories />
  </ApplicationData>
</Add>
</Commands>
</Collection>
</Collections>
</Sync>

```

4.1.10 Example Sync Response Adding a Meeting Request with a Recurrence

The following example shows the **Sync** command response sent by the server to add a meeting request to the Inbox. This meeting occurs every month (<Type> is 3 and <Interval> is 1), in the third week of the month (<WeekOfMonth> is 3), on Tuesday (<DayOfWeek> is 4).

```
<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns:email="Email:" xmlns:airsyncbase="AirSyncBase:" xmlns:email2="Email2:"
xmlns="AirSync:">
  <Collections>
    <Collection>
      <SyncKey>2086787787</SyncKey>
      <CollectionId>5</CollectionId>
      <Status>1</Status>
      <Commands>
        <Add>
          <ServerId>5:14</ServerId>
          <ApplicationData>
            <email:To>"Device User" &lt;deviceuser@example.com&gt;</email:To>
            <email:From>"Device User2" &lt;deviceuser2@example.com&gt;</email:From>
            <email:Subject>Monthly Meeting</email:Subject>
            <email:DateReceived>2009-02-19T08:47:21.842Z</email:DateReceived>
            <email:DisplayTo>Device User</email:DisplayTo>
            <email:ThreadTopic>Monthly Meeting</email:ThreadTopic>
            <email:Importance>1</email:Importance>
            <email:Read>0</email:Read>
            <airsyncbase:Body>
              <airsyncbase:Type>3</airsyncbase:Type>
              <airsyncbase:EstimatedDataSize>503</airsyncbase:EstimatedDataSize>
              <airsyncbase:Truncated>1</airsyncbase:Truncated>
            </airsyncbase:Body>
            <email:MessageClass>IPM.Schedule.Meeting.Request</email:MessageClass>
            <email:MeetingRequest>
              <email:AllDayEvent>0</email:AllDayEvent>
              <email:StartTime>2009-03-17T20:00:00.000Z</email:StartTime>
              <email:DtStamp>2009-02-19T08:47:19.527Z</email:DtStamp>
              <email:EndTime>2009-03-17T21:00:00.000Z</email:EndTime>
              <email:InstanceType>1</email:InstanceType>
              <email:Location>My Office</email:Location>
              <email:Organizer>"Device User2"
&lt;deviceuser2@example.com&gt;</email:Organizer>
              <email:Reminder>900</email:Reminder>
              <email:ResponseRequested>1</email:ResponseRequested>
              <email:Recurrences>
                <email:Recurrence>
                  <email:Type>3</email:Type>
                  <email:Interval>1</email:Interval>
                  <email:Until>20091229T210000Z</email:Until>
                  <email:WeekOfMonth>3</email:WeekOfMonth>
                  <email:DayOfWeek>4</email:DayOfWeek>
                </email:Recurrence>
              </email:Recurrences>
              <email:Sensitivity>0</email:Sensitivity>
              <email:BusyStatus>2</email:BusyStatus>

            <email:TimeZone>aAEEACgARwBNAFQALQAwADYAOGAwADAAGAAQAgAEMAZQBwAHQAAGBhAGwAIAIBUAGkAbQBlACAABVA
FMAIAAAmCAAQwAAAAaAAABAAIAAAAAAAAAAAAAAACgARwBNAFQALQAwADYAOGAwADAAGAAQAgAEMAZQBwAHQAAGBhAGwAIA
BUAGkAbQBlACAABVAFMAIAAAmCAAQwAAAAaAAABAAIAAAAAAAAAAAxP//w==</email:TimeZone>
```

```

<email:GlobalObjId>BAAAAIIA4AB0xbcQGOLgCAAAAADok5WnbpLJAQAAAAAAAAAAAAEAAAAP4Ao5IYwQdKiFkDBeGTTg
Y=</email:GlobalObjId>
    </email:MeetingRequest>
    <email:InternetCPID>28591</email:InternetCPID>
    <email:Flag />
    <email:ContentClass>urn:content-classes:calendarmessage</email:ContentClass>
    <airsyncbase:NativeBodyType>3</airsyncbase:NativeBodyType>
    <email2:ConversationId>'MÅ' &Kä°V÷ŽÓ&#x16;xû</email2:ConversationId>
    <email2:ConversationIndex>Ě'n¬,/</email2:ConversationIndex>
    <email:Categories />
</ApplicationData>
</Add>
</Commands>
</Collection>
</Collections>
</Sync>

```

4.1.11 Example ItemOperations Request

The following example shows the <ItemOperations> command request to retrieve the metadata and body of the e-mail message whose <ServerId> value is 5:10.

```

<?xml version="1.0" encoding="utf-8"?>
<ItemOperations xmlns:airsync="AirSync:" xmlns:airsyncbase="AirSyncBase:"
xmlns="ItemOperations:">
  <Fetch>
    <Store>Mailbox</Store>
    <airsync:CollectionId>5</airsync:CollectionId>
    <airsync:ServerId>5:10</airsync:ServerId>
    <Options>
      <airsyncbase:BodyPreference>
        <airsyncbase:Type>2</airsyncbase:Type>
      </airsyncbase:BodyPreference>
    </Options>
  </Fetch>
</ItemOperations>

```

4.1.12 Example ItemOperations Response With Fetched Content

The following example shows the **ItemOperations** command response to the request in section [4.1.11](#).

Note that in the example, the data in the <Data> element string is XML escaped (NOT HTML). However, as these values are passed over the wire using WBXML, they are passed unencoded (ie < and >).

```

<?xml version="1.0" encoding="utf-8"?>
<ItemOperations xmlns:airsync="AirSync:" xmlns:email="Email:"
xmlns:airsyncbase="AirSyncBase:" xmlns:email2="Email2:" xmlns="ItemOperations:">
  <Status>1</Status>
  <Response>
    <Fetch>
      <Status>1</Status>
      <airsync:CollectionId>5</airsync:CollectionId>
      <airsync:ServerId>5:10</airsync:ServerId>

```

```

<airsync:Class>Email</airsync:Class>
<Properties>
  <email:To>"Device User" &lt;deviceuser@example.com&gt;</email:To>
  <email:From>"Device User2" &lt;deviceuser2@example.com&gt;</email:From>
  <email:Subject>Fetch this content.</email:Subject>
  <email:DateReceived>2009-02-19T01:43:25.266Z</email:DateReceived>
  <email:DisplayTo>Device User</email:DisplayTo>
  <email:ThreadTopic>Fetch this content.</email:ThreadTopic>
  <email:Importance>1</email:Importance>
  <email:Read>0</email:Read>
  <airsynibase:Body>
    <airsynibase:Type>2</airsynibase:Type>
    <airsynibase:EstimatedDataSize>376</airsynibase:EstimatedDataSize>
    <airsynibase:Data>&lt;html dir="ltr"&gt;
&lt;head&gt;
&lt;meta http-equiv="Content-Type" content="text/html; charset=utf-8"&gt;
&lt;style&gt;&lt;/style&gt;&lt;style id="owaParaStyle"&gt;
&lt;!--
p
{margin-top:0px;
margin-bottom:0px}
--&gt;
&lt;/style&gt;
&lt;/head&gt;
&lt;body&gt;
&lt;div style="font-size:13px; color:#000000; direction:ltr; font-family:Tahoma"&gt;
&lt;div&gt;This is the content that was truncated.&lt;/div&gt;
&lt;/div&gt;
&lt;/body&gt;
&lt;/html&gt;
&lt;/airsynibase:Data>
    </airsynibase:Body>
  <email:MessageClass>IPM.Note</email:MessageClass>
  <email:InternetCPID>28591</email:InternetCPID>
  <email:Flag />
  <email:ContentClass>urn:content-classes:message</email:ContentClass>
  <airsynibase:NativeBodyType>2</airsynibase:NativeBodyType>
  <email2:ConversationId>C%ÿ&#x18;&#x8;:B~</email2:ConversationId>
  <email2:ConversationIndex>&#x18;&#x8</email2:ConversationIndex>
</Properties>
</Fetch>
</Response>
</ItemOperations>

```

4.2 Setting MeetingRequest Recurrence Intervals

This section contains sample recurrence patterns and the Recurrence property values used to achieve these patterns.

To set a recurrence to occur on the 15th day of every month, use the following values for the <Recurrence> element:

<Type> = 2

<Interval> = 1

<DayOfMonth> = 15

To set a recurrence to occur on the 31st day of every other month, use the following values:

<Type> = 2

<Interval> = 2

<DayOfMonth> = 31

To set a recurrence to occur every weekday for one week, use the following values:

<Type> = 0

<Interval> = 1

<Occurrences> = 5

<DayOfWeek> = 62

4.3 Setting Flags on the Client and Server

This section provides an example request and response message that are related to setting flags on the client and server.

Note the following:

- Implicit deletes: This term means that if a tag is not found in the <Flag> container, then the property is deleted.
- Although there are tokens from the Tasks namespace, all elements are saved on the e-mail item only. No task items are created.

4.3.1 Example Sync Request Setting a Flag on the Client

The following example **Sync** command request sets a flag with a start date, due date, but no reminder.

```
<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns:email="Email:" xmlns:tasks="Tasks:" xmlns="AirSync:">
  <Collections>
    <Collection>
      <SyncKey>1520171944</SyncKey>
      <CollectionId>5</CollectionId>
      <DeletesAsMoves>1</DeletesAsMoves>
      <GetChanges>1</GetChanges>
      <WindowSize>512</WindowSize>
      <Commands>
        <Change>
          <ServerId>5:3</ServerId>
          <ApplicationData>
            <email:Read>1</email:Read>
            <email:Flag>
              <email:Status>2</email:Status>
              <email:FlagType>for Follow Up</email:FlagType>
              <tasks:StartDate>2009-02-24T08:00:00.000Z</tasks:StartDate>
              <tasks:UtcStartDate>2009-02-24T08:00:00.000Z</tasks:UtcStartDate>
              <tasks:DueDate>2009-02-25T12:00:00.000Z</tasks:DueDate>
              <tasks:UtcDueDate>2009-02-25T12:00:00.000Z</tasks:UtcDueDate>
              <tasks:ReminderSet>0</tasks:ReminderSet>
            
```

```

        </email:Flag>
    </ApplicationData>
</Change>
</Commands>
</Collection>
</Collections>
</Sync>

```

4.3.2 Example Sync Request Setting a Flag on the Server

The following example **Sync** command response sets a flag with a start date, due date, and a reminder.

```

<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns:email="Email:" xmlns:tasks="Tasks:" xmlns="AirSync:">
  <Collections>
    <Collection>
      <SyncKey>735431712</SyncKey>
      <CollectionId>5</CollectionId>
      <Status>1</Status>
      <Commands>
        <Change>
          <ServerId>5:7</ServerId>
          <ApplicationData>
            <email:Flag>
              <tasks:DueDate>2009-02-20T08:00:00.000Z</tasks:DueDate>
              <tasks:UtcDueDate>2009-02-20T08:00:00.000Z</tasks:UtcDueDate>
              <tasks:UtcStartDate>2009-02-19T08:00:00.000Z</tasks:UtcStartDate>
              <tasks:Subject>With Reminder</tasks:Subject>
              <email:Status>2</email:Status>
              <email:FlagType>Flag for follow up</email:FlagType>
              <tasks:StartDate>2009-02-19T08:00:00.000Z</tasks:StartDate>
              <tasks:ReminderSet>1</tasks:ReminderSet>
              <tasks:ReminderTime>2009-02-19T21:00:00.000Z</tasks:ReminderTime>
            </email:Flag>
          </ApplicationData>
        </Change>
      </Commands>
    </Collection>
  </Collections>
</Sync>

```

4.3.3 Example Sync Request Setting the Complete Flag

The following is an example of how to send the request message to the server when the Completed flag for a <FlagType> set to Flag for follow up has been selected on the client.

Note that the <tasks:DateCompleted> element indicates when the user selected the *Completed* flag in the client. The <CompleteTime> element indicates the time that the item was marked as finished.

```

<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns:email="Email:" xmlns:tasks="Tasks:" xmlns="AirSync:">
  <Collections>
    <Collection>
      <SyncKey>509846121</SyncKey>

```

```

<CollectionId>5</CollectionId>
<DeletesAsMoves>1</DeletesAsMoves>
<GetChanges>1</GetChanges>
<WindowSize>512</WindowSize>
<Commands>
  <Change>
    <ServerId>5:5</ServerId>
    <ApplicationData>
      <email:Read>1</email:Read>
      <email:Flag>
        <email:Status>1</email:Status>
        <email:FlagType>Flag for follow up</email:FlagType>
        <email:CompleteTime>2009-02-19T08:30:00.000Z</email:CompleteTime>
        <tasks:StartDate>2009-02-19T08:00:00.000Z</tasks:StartDate>
        <tasks:UtcStartDate>2009-02-19T08:00:00.000Z</tasks:UtcStartDate>
        <tasks:DueDate>2009-02-19T08:00:00.000Z</tasks:DueDate>
        <tasks:UtcDueDate>2009-02-19T08:00:00.000Z</tasks:UtcDueDate>
        <tasks:DateCompleted>2009-02-19T09:30:00.000Z</tasks:DateCompleted>
        <tasks:ReminderSet>0</tasks:ReminderSet>
        <tasks:ReminderTime>2009-02-24T20:00:00.000Z</tasks:ReminderTime>
        <tasks:Subject>Please follow up</tasks:Subject>
      </email:Flag>
    </ApplicationData>
  </Change>
</Commands>
</Collection>
</Collections>
</Sync>

```

4.3.4 Example Sync Request Clearing a Flag on the Client

The following example shows what to include in a request message to clear a flag.

```

<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns:email="Email:" xmlns:tasks="Tasks:" xmlns="AirSync:">
  <Collections>
    <Collection>
      <SyncKey>1401532757</SyncKey>
      <CollectionId>5</CollectionId>
      <DeletesAsMoves>1</DeletesAsMoves>
      <GetChanges>1</GetChanges>
      <WindowSize>512</WindowSize>
      <Commands>
        <Change>
          <ServerId>5:5</ServerId>
          <ApplicationData>
            <email:Read>1</email:Read>
            <email:Flag>
              <email:Status>0</email:Status>
              <email:FlagType>Flag for follow up</email:FlagType>
              <email:CompleteTime>2009-02-19T08:30:00.000Z</email:CompleteTime>
              <tasks:StartDate>2009-02-19T08:00:00.000Z</tasks:StartDate>
              <tasks:UtcStartDate>2009-02-19T08:00:00.000Z</tasks:UtcStartDate>
              <tasks:DueDate>2009-02-19T08:00:00.000Z</tasks:DueDate>
              <tasks:UtcDueDate>2009-02-19T08:00:00.000Z</tasks:UtcDueDate>
              <tasks:DateCompleted>2009-02-20T09:30:00.000Z</tasks:DateCompleted>
              <tasks:ReminderSet>0</tasks:ReminderSet>
            </email:Flag>
          </ApplicationData>
        </Change>
      </Commands>
    </Collection>
  </Collections>
</Sync>

```



```
        <tasks:ReminderTime>2009-02-24T20:00:00.000Z</tasks:ReminderTime>
        <tasks:Subject>Please follow up</tasks:Subject>
    </email:Flag>
</ApplicationData>
</Change>
</Commands>
</Collection>
</Collections>
</Sync>
```

5 Security

5.1 Security Considerations for Implementers

None.

5.2 Index of Security Parameters

None.

6 Appendix A: Product Behavior

The information in this specification is applicable to the following Microsoft products:

- Microsoft® Exchange Server 2007 Service Pack 1 (SP1)
- Microsoft® Exchange Server 2010
- Microsoft® Exchange Server 2010 Service Pack 1 (SP1)

Exceptions, if any, are noted below. If a service pack number appears with the product version, behavior changed in that service pack. The new behavior also applies to subsequent service packs of the product unless otherwise specified. If a product edition appears with the product version, behavior is different in that product edition.

Unless otherwise specified, any statement of optional behavior in this specification prescribed using the terms SHOULD or SHOULD NOT implies product behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term MAY implies that product does not follow the prescription.

[<1> Section 2.1:](#) The Email2 namespace is not supported when the MS-ASProtocolVersion header is set to 12.1. For more information about the MS-ASProtocolVersion header see [\[MS-ASHTTP\]](#) section 2.2.2.1.2.1. For more information about the applicability of the MS-ASProtocolVersion header value to Exchange 2007 and Exchange 2010, see [\[MS-ASHTTP\]](#) section 1.6.

[<2> Section 2.1:](#) The RightsManagement namespace is not supported when the MS-ASProtocolVersion header is set to 12.1 or 14.0.

[<3> Section 2.2.2.11.1.2:](#) The <email2:UmAttOrder> element is not supported when the MS-ASProtocolVersion header is set to 12.1.

[<4> Section 2.2.2.11.1.3:](#) The <email2:UmAttDuration> element is not supported when the MS-ASProtocolVersion header is set to 12.1.

[<5> Section 2.2.2.14.6:](#) Office Outlook 2007 and Outlook 2010 limit the value of the <Location> element to 255.

[<6> Section 2.2.2.14.9.1.9:](#) The <email2:CalendarType> element is not supported when the MS-ASProtocolVersion header is set to 12.1.

[<7> Section 2.2.2.14.9.1.10:](#) The <email2:IsLeapMonth> element is not supported when the MS-ASProtocolVersion header is set to 12.1.

[<8> Section 2.2.2.14.9.1.11:](#) The <email2:FirstDayOfWeek> element is not supported when the MS-ASProtocolVersion header is set to 12.1 or 14.0.

[<9> Section 2.2.2.14.16:](#) The <DisallowNewTimeProposal> element is not supported when the MS-ASProtocolVersion header value is set to 12.1.

[<10> Section 2.2.2.14.17:](#) The <email2:MeetingMessageType> element is not supported when the MS-AS-ProtocolVersion header value is set to 12.1 or 14.0.

[<11> Section 2.2.2.19:](#) The <email2:UmCallerID> element is not supported when the MS-ASProtocolVersion header value is set to 12.1.

[<12> Section 2.2.2.20:](#) The <email2:UmUserNotes> element is not supported when the MS-ASProtocolVersion header value is set to 12.1.

[<13> Section 2.2.2.21:](#) The <email2:ConversationId> element is not supported when the MS-ASProtocolVersion header is set to 12.1.

[<14> Section 2.2.2.22:](#) The <email2:ConversationIndex> element is not supported when the MS-ASProtocolVersion header is set to 12.1.

[<15> Section 2.2.2.23:](#) The <email2:LastVerbExecuted> element is not supported when the MS-ASProtocolVersion header value is set to 12.1.

[<16> Section 2.2.2.24:](#) The <email2:LastVerbExecutionTime> element is not supported when the MS-ASProtocolVersion header value is set to 12.1.

[<17> Section 2.2.2.25:](#) The <email2:ReceivedAsBcc> element is not supported when the MS-ASProtocolVersion header value is set to 12.1.

[<18> Section 2.2.2.26:](#) The <email2:Sender> element is not supported when the MS-ASProtocolVersion header value is set to 12.1.

[<19> Section 2.2.2.27:](#) The <Categories> element is not supported when the MS-ASProtocolVersion header is set to 12.1.

[<20> Section 2.2.2.27.1:](#) The <Category> element is not supported when the MS-ASProtocolVersion header value is set to 12.1.

[<21> Section 2.2.2.28:](#) The <airsyncbase:BodyPart> element is not supported when the MS-AS-ProtocolVersion header value is set to 12.1 or 14.0.

[<22> Section 2.2.2.29:](#) The <email2:AccountId> element is not supported when the MS-AS-ProtocolVersion header value is set to 12.1 or 14.0.

[<23> Section 2.2.2.30:](#) The <rm:RightsManagementLicense> element is not supported when the MS-AS-ProtocolVersion header value is set to 12.1 or 14.0.

7 Change Tracking

This section identifies changes that were made to the [MS-ASEMAIL] protocol document between the August 2010 and November 2010 releases. Changes are classified as New, Major, Minor, Editorial, or No change.

The revision class **New** means that a new document is being released.

The revision class **Major** means that the technical content in the document was significantly revised. Major changes affect protocol interoperability or implementation. Examples of major changes are:

- A document revision that incorporates changes to interoperability requirements or functionality.
- An extensive rewrite, addition, or deletion of major portions of content.
- Changes made for template compliance.
- Removal of a document from the documentation set.

The revision class **Minor** means that the meaning of the technical content was clarified. Minor changes do not affect protocol interoperability or implementation. Examples of minor changes are updates to clarify ambiguity at the sentence, paragraph, or table level.

The revision class **Editorial** means that the language and formatting in the technical content was changed. Editorial changes apply to grammatical, formatting, and style issues.

The revision class **No change** means that no new technical or language changes were introduced. The technical content of the document is identical to the last released version, but minor editorial and formatting changes, as well as updates to the header and footer information, and to the revision summary, may have been made.

Major and minor changes can be described further using the following change types:

- New content added.
- Content updated.
- Content removed.
- New product behavior note added.
- Product behavior note updated.
- Product behavior note removed.
- New protocol syntax added.
- Protocol syntax updated.
- Protocol syntax removed.
- New content added due to protocol revision.
- Content updated due to protocol revision.
- Content removed due to protocol revision.
- New protocol syntax added due to protocol revision.

- Protocol syntax updated due to protocol revision.
- Protocol syntax removed due to protocol revision.
- New content added for template compliance.
- Content updated for template compliance.
- Content removed for template compliance.
- Obsolete document removed.

Editorial changes are always classified with the change type "Editorially updated."

Some important terms used in revision type descriptions are defined as follows:

- **Protocol syntax** refers to data elements (such as packets, structures, enumerations, and methods) as well as interfaces.
- **Protocol revision** refers to changes made to a protocol that affect the bits that are sent over the wire.

The changes made to this document are listed in the following table. For more information, please contact protocol@microsoft.com.

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change Type
6 Appendix A: Product Behavior	58901 Changed Exchange 2007 SP3 to Exchange 2007 SP1.	N	Content updated.

8 Index

A

[Applicability](#) 9

C

[Capability negotiation](#) 9

[Change tracking](#) 85

Client

[overview](#) 42

E

[Examples - overview](#) 68

F

[Fields – vendor-extensible](#) 10

G

[Glossary](#) 7

I

[Implementer – security considerations](#) 82

[Index of security parameters](#) 82

[Informative references](#) 9

[Introduction](#) 7

M

Message

[transport](#) 11

Messages

[overview](#) 11

N

[Normative references](#) 8

O

[Overview \(synopsis\)](#) 9

P

[Parameters – security index](#) 82

[Preconditions](#) 9

[Prerequisites](#) 9

[Product behavior](#) 83

R

References

[informative](#) 9

[normative](#) 8

[Relationship to other protocols](#) 9

S

Security

[implementer considerations](#) 82

[overview](#) 82

[parameter index](#) 82

Server

[overview](#) 56

[Standards Assignments](#) 10

T

[Tracking changes](#) 85

[Transport](#) 11

V

[Vendor-extensible fields](#) 10

[Versioning](#) 9